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THE LARGEST COLLECTION OF MEDICAL LITERATURE EVER ASSEMBLED. THE STORY OF THE ARMY MEDICAL LIBRARY.

With Notes of Virginians Who Have Directed It.*

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I cannot expect a group of librarians to be surprised at some of the statements I am about to make about the Army Medical Library. You, of all people, know of books and collections of books. I am sure that you know of the Army Medical Library of Washington, often still known by its old name, The Library of the Surgeon General's Office. But perhaps you do not know the dramatic story of its development from a mere shelf of books a century ago to its great extent now—the largest collection of books and other materials in the broad field of medical sciences, that has ever existed.

That our new country could have accomplished this marvel in the space of a hundred years is one of the great achievements of American medical science. It is a thing for just pride of all our countrymen. Its growth and real development are due to the genius of one of the most protean medical men of our times, Dr. John Shaw Billings, Surgeon, United States Army. His interest grew out of his own experience in preparing his graduation thesis at the University of Cincinnati, 1860. He became convinced, as he stated in an address delivered thirty years later at his university, of three things:

"The first was, that it involves a vast amount of time and labor to search through a thousand volumes of medical books and journals for items on a particular subject, and that the indexes of such books and journals cannot always be relied on as a guide to their contents. The second is, that there are in existence, somewhere, over 100,000 volumes of such medical books and journals, not counting pamphlets and reprints. And the third was, that while there was nowhere in the world a library which contained all medical literature, there was not in the United States any fairly good medical library, one in which a student might hope to find a large part of the literature relating to any medical subject, and that if one wished to do good bibliographical work to verify the references given by European medical writers, or to make reasonably sure that one had before him all that had been seen or done by previous observers or experimenters on a given subject, he must go to Europe and visit, not merely one, but several of the great capital cities in order to accomplish his desire."

Billings served with great distinction through the War Between the States and when that was over, was assigned to the War Department as one of the Assistants to the Surgeon General. He found the small collection of medical books begun in 1836 by Surgeon General Lovell, and continued through the long term of office, twenty-five years, of that distinguished Virginian, Dr. Thomas Lawson, Surgeon General, U.S.A., which ended with his death in 1861. This collection of books was a small one indeed. Its first catalogue (1840) included only 136 titles, representing 228 volumes. Even in 1865 the first printed catalogue showed only 2,253 volumes (602 titles under eleven topical subdivisions). Billings was fired with the desire to build up this little nucleus and make it grow to a great national medical library.

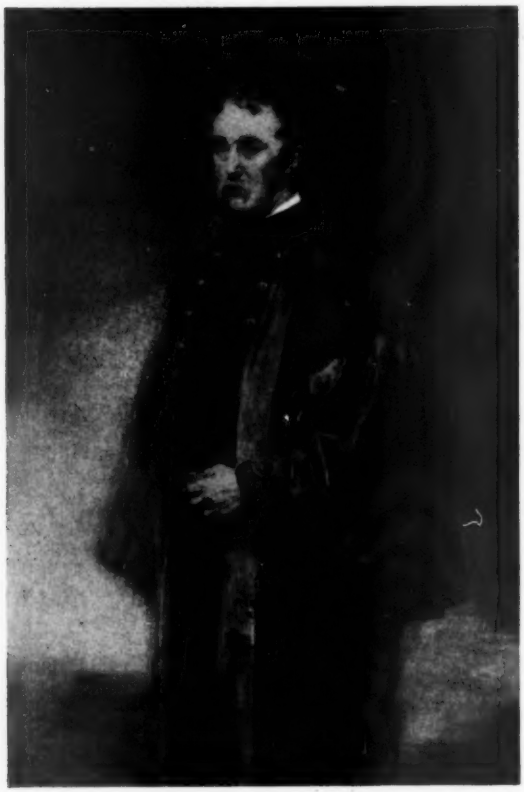
In 1868 the sum of $80,000, left over from U. S. Army hospital funds, was turned over to Billings by far-sighted Surgeon General Barnes, and he began his great work of collecting and cataloguing medical literature. In 1871 he got out his first catalogue. It appeared in 1872 (454 pages with a supplement of twenty-six pages). A three-volume catalogue, each volume of the approximate size of those of the present Index Catalogue, appeared in 1873-1874. These

*Address delivered before the annual meeting of the Virginia Library Association at Old Point Comfort, Virginia, October 27, 1939.

works were lists only, not comparable to the later publication.

The catalogue of 1871 is introduced by the following memorandum:

"That there is need in this country of a medical library of this character is sufficiently evident from the fact that, in all the public medical libraries of the United States put together, it would not be possible to verify, from the original authorities, the references given by the standard English or German



John Shaw Billings (1838-1912). Portrait by Cecelia Beaux in the Army Medical Library. It is inscribed: "John S. Billings, in Charge of Library, 1865-1895, Presented by 260 physicians of America and Great Britain". The complete list of subscribers, which contains some of the most illustrious names in modern medicine, is given in *Medical News*, Philadelphia, 1893, lxvii, 640-641. Over his uniform Billings is wearing the gown of a D.C.L. of Oxford.

authorities, such as Hennen, Reynolds, or Virchow. No complete collection of American medical literature is in existence; and the most complete, if in this country, is in private hands, and not accessible to the public, while every year adds to the difficulty of forming such a collection as the Government should possess."

Billings envisaged something more than a mere list of the books in the library of which he had charge, for "all is not bibliography that pretends to be such." "Books," he said, "are properly compared to tools of which the index is the handle." He contemplated the most mighty piece of bibliography ever undertaken in medical science or in any other field. He considered that the profession of medicine was entitled to a catalogue in which under both authors and subjects the literature of the world could be found. He wanted the ideas of the leaders of scientific thought in every land, so, in 1876, he published a *Specimen Fasciculus of a Catalogue of the National Medical Library, under the Direction of the Surgeon-General, United States Army.* This he submitted to the medical profession for criticisms and suggestions. Its style and arrangement were practically those of the present *Index Catalogue,* differing only in certain typographical details.

From 1876 on, Billings continued the preparation of the prospective Index Catalogue. At length in 1880, partly through the good offices of Dr. Abraham Jacobi, Congress made the appropriation for printing it.

The matter of typography and general arrangement of the contents having been settled in the *Specimen Fasciculus,* the main question was that of classification. "Following the general idea of a subject and author catalogue arranged in dictionary order in a single alphabet, the special subjects were featured by means of key titles or rubrics. After settling upon the main grand divisions, such as Aneurism, Cancer, Tumors, etc., and subdividing these, the subjects of lesser weight easily fell into their place by the simple device of finding the centers of gravity of the title in each case." (Garrison). Dr. Billings saw clearly that he could not prepare a complete bibliography of his subject, but rather a bibliographical conspectus of the contents of a great library. Happily this proved so complete that it became, for practical use, a working bibliography of medicine. Modern medical science was even then beginning to advance by leaps and bounds, its surface aspect constantly changing as it advanced, so that he saw at once that it would be impossible to adopt any arbitrary and fixed classification based on a definite scheme of nosology. Any such scheme would have been, like the average medical textbook of today, obsolete within a few years.

The appearance of the *Index Catalogue* marked

an epoch in the development and improvement of medical literature, particularly in the United States. Editors of medical journals, chiefs of clinics and laboratories, and physicians writing upon all branches of medicine, who formerly had to obtain historical, statistical, and other data in a most haphazard way, now had their materials ready to hand in the most convenient and accessible form possible, that is, the strictly alphabetical. The *Index Catalogue* has no equal. "Its preparation," said Osler, "is Gargantuan." In no other field of knowledge is there a work comparable to this, the world's standard of medical bibliography.

Billings used to say: "The *Catalogue* is a tool that must be used for a time before you can judge of its merits." Certainly it has been used to that point. Years ago Osler told of how worn and bethumbed were the volumes of the *Index Catalogue* in foreign medical libraries, and I have myself seen the same condition in a dozen or so countries. The *Catalogue* as a working tool is in constant use in Tokyo, Stockholm, Buenos Aires, and way points. In his Schorstein Memorial Lecture, delivered at the London Hospital on October 17, 1935, Professor William Bulloch, F.R.S., said: "Among catalogues the Surgeon-General's is regarded by the authorities at the British Museum as the greatest ever achieved. It has the great virtue of being a subject index, unlike that of the British Museum, which is a name index only. The story of its construction is not as well known as it ought to be." (*B.M.J.*, October 26, 1935).

Let us digress for a little and look at Billings's distinguished career as a whole. He was uniformly successful. Not only was he the real father of the Army Medical Library and its mighty catalogue, "Billings' float down to posterity", as Osler called it, but he designed and supervised the building of the Johns Hopkins Hospital; he selected many of the first Johns Hopkins medical faculty, including such men as Osler and Welch; he had charge of the vital and social statistics of the Tenth and Eleventh Censuses of the United States; his analysis and report had much to do with the transformation of the old Marine Hospital Service to the splendid modern United States Public Health Service; he was Professor of Hygiene at the University of Pennsylvania; he consolidated the three public libraries of New York City and catalogued each, becoming librarian when the present well-known building was completed. Billings is without question one of America's greatest physicians.

Billings retired from the Army in 1895 to assume the direction of the New York Public Library, but before so doing, he had, with his unerring judgment of men, selected his successor. This was that great Virginia, Major Walter Reed of the Army Medical Corps. Dr. Reed was just completing his epoch-making studies of the relationship of the mosquito to yellow fever, so that he was not available to serve at that time at the Army Medical Library. Seven years later (1902), however, he was made Librarian and thus attained "the highest ambition of his life", as he expressed it to Dr. Garrison (*Billings-Memoir*, 179n). He held the office but a single week, for his career was cut short by his untimely death at the age of fifty-one from a ruptured gangrenous appendix.

Walter Reed was born at Belroi, Virginia, in 1851. He entered the University of Virginia at the age of sixteen, and after one year of academic work took up the study of medicine. He won his M.D. at the early age of eighteen. Following his graduation he went to the Bellevue Hospital Medical College where, after one year's work, he obtained another M.D. This practice of graduate physicians taking an M.D. *ad eundum,* was not uncommon. Reed's future coworker, Gorgas, did the same thing. Young Reed entered the Army as an Assistant Surgeon in 1875 and for the next fifteen years served in Western posts, doing the ordinary small round of post duties. In 1890 he was ordered to the Johns Hopkins Medical School where he came in contact with that group of geniuses whose happy fellowship made that so great a place. There he worked in pathology and in the young science of bacteriology. In 1893, Surgeon General Sternberg, one of America's pioneers in bacteriology, established the Army Medical School, which may justly be called the first school of preventive medicine in the United States. Walter Reed was detailed as Professor of Bacteriology, a position which he held until his death. When the Spanish-American War brought with it those fearful epidemics of typhoid fever, Reed was one of a board to study its causes. The other members were Prof. Victor C. Vaughan of the University of Michigan, and Edward O. Shakespeare. Their very full report threw much light on the epidemiology of that ancient scourge of armies in the field. Following the war, Dr. Reed was made president of the most famous

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board the Army has ever constituted, the board to study tropical diseases in Cuba. Now he did his great work. This is not the place to go into details as to Reed's proof that the long-suspected mosquito does indeed transmit yellow fever, but prove it he did, and on that proof rests much of the health structure of the tropics today. Without Gorgas's resulting work, there could have been no Panama Canal.

Billings was succeeded as Librarian by Colonel David Low Huntington and he by Surgeon James Cushing Merrill both of Massachusetts. They held office respectively 1896-1897 and 1898-1902. After Major Walter Reed's death, the office of Librarian passed to Brigadier-General Calvin DeWitt of Pennsylvania, some time Commandant of the Army Medical School and Curator of the Army Medical Museum, the sister institution of the Library. He was the father of Brigadier-General Wallace DeWitt, now Commandant of the Army Medical Center, Washington, and of Lieutenant-General John Lesesne DeWitt, U. S. Army. General DeWitt was Librarian, 1903-1904.

He was succeeded by a brilliant son of Virginia, Dr. Walter Drew McCaw, one of the outstanding military surgeons of the modern period, and son of the distinguished and beloved Dr. James Brown McCaw of the Confederate States Army, whose direction of the Chimborazo Hospital of Richmond amid the hardships and difficulties of the War Between the States must be ranked as one of the greatest pieces of military-medical administration in the country's history. Dr. McCaw, then a Major, was Librarian from 1903 to 1913. This, it will be noted, was the longest period that the office had been held since Billings's retirement. Indeed, McCaw's service was longer than the combined services at the library of his four predecessors or his three successors. Like Billings, he had a career made up wholly of successes, though it cannot be said that he made the most of a mind far beyond the average in ability.

General McCaw entered the Army Medical Service in 1884 at the head of his class. After fourteen years service in the West, he went to Cuba with the Army under General Shafter, and took part in the battle before Santiago. For this service under fire he received the Silver Star many years later. In 1899 he went to the Philippines and served in the Insurrection with the 42nd Infantry. He had, "already acquired a reputation for learning, and was, on this account brought to Washington by General O'Reilly when he became Surgeon General in 1902, so that his office should maintain the reputation for scholarship which it had long held. In the congenial duties of the great Library he spent twelve happy and fruitful years. His duties were, however, by no means limited to the Library. He was, as one of the three assistants of the Surgeon General, often called in council and prepared the Annual Reports of the Surgeon General's Office. When the "Manchu Law", as it is called in the Army, came into effect, Colonel McCaw went to Manila for a second tour of tropical service during which time he was Chief Surgeon of the Department. The "Manchu Law", which has been in force ever since, prohibits the service in Washington of any officer for a period in excess of four years at any one time.

The Army Medical Library and Museum, Washington. Buliding erected in 1887, now inadequate to house the two great collections of books and exhibits. A new building has been authorized by Congress.

The World War found Colonel McCaw ready for great responsibilities, and these he discharged with great efficiency, becoming in 1918 Chief Surgeon of the American Expeditionary Force. On his return from France he was for four years Commandant of the Army Medical School, having been promoted Brigadier-General in 1919. Thereafter he was Assistant Surgeon General until his retirement in 1927. Of him, his life-long friend, fellow medical officer and fellow Virginian, Brigadier-General Jefferson Randolph Kean, said:

"The fairies who are said to bring gifts to the newly born infants, gave our friend many great and admirable ones. To a mind so quick and penetrating that nothing was too difficult for it, was added a marvelous memory. His eye was so keen that he could read the printed page almost at a glance, and his memory would retain whatever he cared to remember. His taste in literature, in the arts and in all things good and beautiful was exact and discriminating. His learning became encyclopedic, yet he was never pedantic, nor carried his delightful conversation into fields which were beyond the interests of his companions. His judgment was sound and practical, an unusual thing in brilliant minds, though it was tinged with a mild pessimism which made him sometimes shoot below the mark. While he perfectly realized his great gifts, this consciousness was untainted with conceit, or any air of superiority. He was both a great scholar and a very perfect gentleman. Death came to him, not unwelcome after a long illness, to close a full and happy life on July 7, 1939, in the 76th year of his age." (*Military Surgeon,* October, 1939).

But to return to the Library. With Colonel Billings's retirement at the completion of the *First Series* of the *Index Catalogue,* the work of editing a *Second Series* fell on his successors. It was begun in 1896 under the careful redaction of Dr. Robert Fletcher, long Billings's close associate at the Library. Fletcher continued his work up to his death in 1912 in his ninetieth year. The *Second Series* was completed four years later and from 1918 to 1932 the *Third Series* was published. The plan of the work has remained unchanged, except that in 1926 Vol. VI, *Second Series,* when it seemed that what Army officers call "the exigencies of the Service", might require that the *Index Catalogue* be replaced by a year book, material published prior to 1926 was withheld from the *Catalogue,* in order quickly to finish the *Third Series.* Fortunately the wisdom of continuing the old plan was seen and the material, that was for six years omitted, is now being incorporated into the *Fourth Series,* the first volume of which appeared in 1936.

The *Index Catalogue* is one of the most easily used working tools that a librarian can have. For example, in order to find the literature of, say, *fractures of the clavicle,* one simply refers to the C volume of the *First Series* of the *Catalogue* where under *Clavicle, Fractures of,* there are listed first the books, then the theses, and finally the articles in the medical journals of the world, all that had been collected on this topic from the early days down to the date when this particular volume of the *First Series* went to press: 1882. Next, in the C volume of the *Second Series,* the material on this subject that was indexed between 1882 and 1898, the date of its printing, would be found. Similarly in the C volume of the *Third Series* the material from 1898 to 1922 would be recorded, 1922 being the date that this volume of the Catalogue went to press. In like manner, the C volume of the *Fourth Series* contains material from 1922 to 1938, its publication date. For material since 1938 the card index of the Library is available. Moreover, by taking the annual volumes of the *Index Medicus* from 1922 to date, the bulk of the remaining medical literature on our selected topic would be found, though the Army Medical Library indexes considerably more material than does the *Quarterly Cumulative Index Medicus.* How simple, yet how often does the Library receive letters asking how the literature on any subject may be "looked up"!

Garrison, himself one day to become assistant librarian, told of a conversation with the then holder of that office, Dr. Robert Fletcher. In his whimsical way Fletcher "likened the *Index Catalogue* to a vast metropolitan hotel containing story after story of rooms and suites of rooms of all sizes and prices, adapted to the tenants of every degree of income and worldly place. In such a caravansary, some subjects like *Labour, Surgery, Water Supply,* etc., are old wealthy patrons having a permanent claim upon apartments of vast extent, occupying an entire floor. Others, such as *Acupuncture, Amulets, Animism,* are on such a slender financial footing that they must put up with hall bedrooms or be 'cabined, cribbed, confined' in the attic. Others, such as *Arteriosclerosis, Bacteriology, Parasitology, Pellagra, Poliomyelitis,* were once poor and needy, but, having come up

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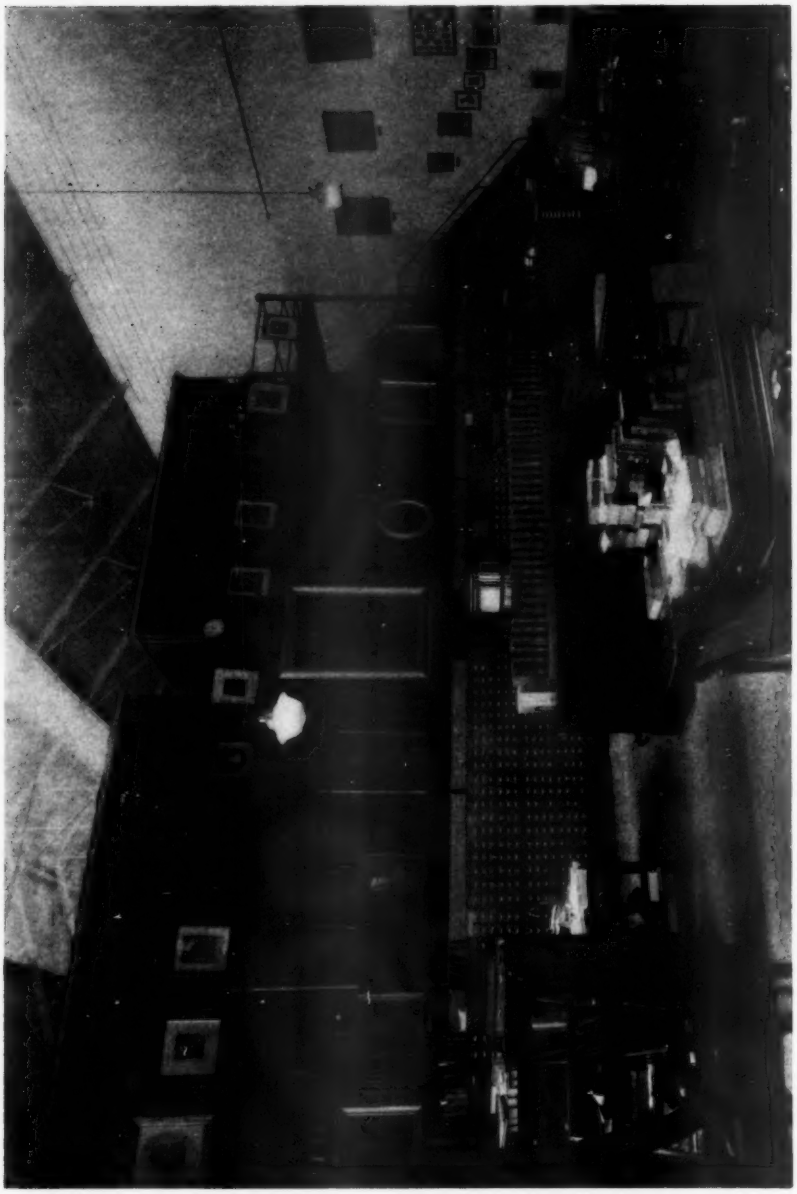


Library Hall, Army Medical Library.

in the world, acquire extensive suites, with rooms perchance for even maid and courier. Others, such as many modern drugs, diagnostic tests, and surgical procedures, are bounders and get-rich-quick parvenus, who exhaust their substance in vain and vulgar show, fading away as soon as their credit is gone." Dr. Fletcher's picture is still a true one, and the librarian and editor of the *Index Catalogue* must still seek, like mine host of a large hotel, to accommodate the guests in apartments of the proper size and position, though not without a careful eye on the guest's probable ability to pay his reckoning.

Billings once said that a librarian is in one respect only a sort of hodcarrier, "who brings together the bricks made by one set of men in order that another set of men may build therewith—but he is apt to

take quite as much pride and satisfaction in the resulting structure, provided it be a good one, as if he built it himself." Thus does he differ, I may add, from the hodcarrier of the ancient Irish story, who felt that all he had to do was to carry the bricks to the top of the wall and the man there would do all the work!

The task of indexing for the *Catalogue* the periodical medical literature that is received at the Army Medical Library, is enormous. The Library receives about 2,000 medical journals and indexes *every* worth-while article, in *every* issue of *every* journal of almost *every* country and in almost *every* civilized language. Books, theses, pamphlets, documents are similarly indexed. Dr. Fletcher once exclaimed that the whole world was in conspiracy against medical bibliography. As Professor Bulloch recently said in England, "Presently the population not actually engaged in writing would be employed in indexing and cataloguing."

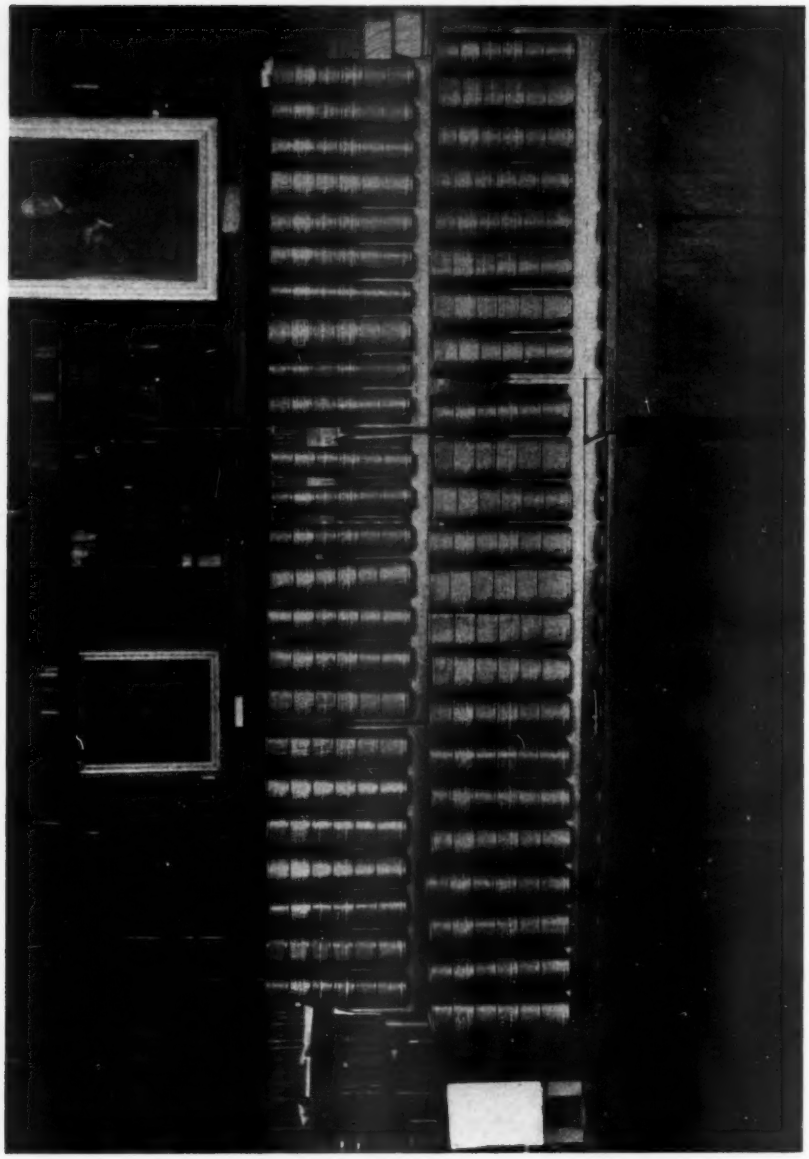
The publication of the *Index Catalogue* is an expensive affair, though it is generally admitted that it has been done with the minimum of cost. The thousand copies of each volume cost between eighteen and nineteen thousand dollars merely to print. The work of preparation costs something more than $14,000, so that the cost of each completed copy is about $32 or $33. The Government Printing Office, where the law requires this work, as all Government printing, to be done, has stated repeatedly that the *Index Catalogue* is its most difficult bit of printing. The text is all set by the monotype machine, an efficient but not simple apparatus, in the use of which the operator cannot see what he is writing and cannot at that time correct errors. The general reduction of War Department funds following the depression made it impossible to issue the usual annual volumes of the *Index Catalogue* for 1933, 1934, and 1935. However, the publication was duly resumed in 1936 and now Volume V, the letter E, is on the press, and two volumes a year are anticipated until the three missing numbers have been made up. So once more the sun shines, bibliographically speaking!

In 1879, Billings established another monumental work, the *Index Medicus*, a monthly classified record of the current medical literature of the world.

The *Index Medicus* consisted from the start of a carefully printed monthly fasciculus, giving the medical literature of the preceding month carefully arranged as to subject-rubrics. The classification, as covering a smaller body of material, is more general and less subdivided than that of the *Index Catalogue*, the scheme of nomenclature and nosology being, as the editors stated, essentially that adopted by the Royal College of Physicians of London, "based upon Dr. Farr's well-known system". In the early issues of the *Index Medicus* a special page of medical "Notes and Queries" was included, consisting of questions and answers bearing upon rare books and editions, and other matters of medical bibliography and history. At the end of each volume of twelve numbers an annual author and subject index of the whole material was prepared, the subject index being minutely subdivided, forming, in respect to classification, a sort of annual *Index Catalogue en miniature*.

Never a Government publication, the *Index Medicus* had hard financial sailing from the start. It was expensive to publish and though of the greatest use, the number of its subscribers was necessarily limited, being chiefly medical libraries. From January, 1879 (Volume I), to April, 1899 (Volume XXI), it was published successively in New York, Detroit, Boston, and Washington. Then came the time when its founders could no longer afford to continue it. In vain did Osler plead before a meeting of the American Medical Association that physicians subscribe. *Bibliographia Medica*, under the redaction of MM. Charles Richet and Marcel Baudouin, was issued in Paris as a replacement for the *Index Medicus*, from 1900 to 1902, three volumes having been published. In 1903 the Carnegie Institution of Washington took over the *Index Medicus* and the second series edited by Drs. Fletcher and Garrison ran from 1903 to 1920, eighteen volumes in all. In 1921 the third series began and continued until 1927 when the *Index Medicus* was merged with the *Quarterly Cumulative Index* (founded 1916) of the American Medical Association. The combined periodical, the *Quarterly Cumulative Index Medicus*, was published under the joint direction of the Army Medical Library and the American Medical Association until December, 1931, when its connection with the Library ceased and it became solely a journal of the Association.

In 1914 Professor Adami, of McGill, writing of the *Index Catalogue* and *Index Medicus*, said: "It is difficult to realize what service those two publications have been to science the world over, or what has been the influence also to medicine the world



The Index Catalogue of some fifty volumes contrasted with the pamphlet catalogue of 1865 (at left).
Taken together they serve as Billings's most eloquent memorial.

over of the existence of the marvelously progressive Library of the Surgeon-General's Office, and its service in bibliographical search. . . . [It is] regarded everywhere as *the* model medical library. . . . I would go so far as to say that the outstanding service to medicine by the United States has been this Library with its publications." (*Bul. Med. Libr. Assn.*, III, 56).

The Army Medical Library was without its own building until 1887, its collections being theretofore stored in Ford's Theatre, Washington, the melancholy scene of President Lincoln's assassination, and later used by the War Department as a storehouse. In 1887 the present building at Seventh Street and Independence Avenue (formerly B Street), Southwest, was completed. For nigh half a century it was sufficient for the rapidly growing collections of books and other material. But libraries, particularly

rapidly expanding ones, have, as we all know, a way of outgrowing their quarters if there be no facilities for extension. This has happened to the Army Medical Library during the half century that it has occupied the well-known red brick building next to the old National Museum in Washington. The stacks are so full that the engineers have directed that no increase in weight be permitted. Thus books have to be withdrawn when others are added. The overflow now crowds the basement, and indeed every nook and corner in the building. That a new building must be provided is obvious. Moreover, as the present building has been marked for demolition, as a part of the general plans for the public parks of the National Capital, another site must be used.

In 1939 Congress passed an Act authorizing the expenditure of $3,200,000 for a new building to be erected at a site selected by the President. It is understood that the new building will be located somewhere in the area known as the Mall, that is between the Capitol and Washington's Monument. The funds for the building have not yet been appropriated but it is hoped that they will not be withheld much longer for the saturation point at the present building is almost within sight.

Billings used to estimate that about one-thirtieth of the world's literature was medical, and gave figures to prove it. There is no reason to think that the ratio has changed since Billings's time. If this figure be accepted, it is interesting to compare the size of the collection of the Army Medical Library with the country's largest general collection of books, the Library of Congress, which, incidentally, is now larger than the collection of either the British Museum or the Bibliothèque Nationale, Paris. The report for 1934 shows that the Library of Congress had 4,805,646 volumes. The Army Medical Library would, to maintain Billings's ratio, have to include not less than 160,188 volumes. As a matter of fact it contains 941,181 volumes or about six times what it would be expected to have to be compared with the Library of Congress. The difference in expenditures is also striking. The Army Medical Library has about 19 per cent as many volumes as the Library of Congress, but receives only about 9⅛ per cent of the annual appropriation for purchases.

Of rare medical books, the Army Medical Library has a magnificent collection. Books printed before 1500 are known as *incunabula,* from the Latin word for cradle, as printing was then in its infancy. Some six hundred medical incunabula are known, and of this number the Army Medical Library has no less than four hundred and fifty, the largest number to be found in any library in the New World, and a collection that stands comparison with that of any library in the Old World. Of some works the Army Medical Library has the only known copy, and of rare books published after 1500 the collection is one of the best. The same is true of early medical manuscripts, of which the Library possesses one hundred and fifty.

The oldest publication possessed by the Army Medical Library is Johannes Gerson's *De pollutione nocturna,* printed in Cologne in 1467, the only copy in the United States. Another very old book, though less rare as there are other copies in this country, is *Speculum humanæ vitæ* by Rodericus Zamorensis, printed in Rome in 1468.

Among early writings on plague, the Library has Valescus de Taranta's *De epidemia,* Basel, 1470, and Alcanis Luis's *Regimen pestilentiæ,* printed at Valencia about 1490. The Library has also a perfect copy of the first printed book on pediatrics, Bagellardo's *De infantium ægritudinibus,* Padua, 1472, a sort of compendium of practice of the time in which it was written. The only other copy in America is in the Pierrepont Morgan collection.

Many of these incunabula are first editions. *De medicinis universalibus* by the Arabian physician Mesue, the younger, printed in Venice in 1471, is the first purely medical book ever printed in the world. Another Arabian physician, Abulqasim, was printed in the same place and year. Both authors were very famous during the Middle Ages, and their works served as texts for medical students. Both volumes are the only known copies in the United States. In America, Ibn Sina's *Canon,* printed in Padua in 1479, is found only in the Army Medical Library. Our Latin Galen, published by Pinzius in Venice in 1490, is also a first edition, and, though it is an incomplete copy, it is often photographed on account of its rarity.

Of the very early publications on the *"mala de Franzos"*, the Library possesses Joseph Gruenpeck's Latin treatise, *De pestilentiali scorra,* first published in 1496, a work of great contemporary popularity. This edition, printed in Cologne, is exceedingly rare, copies being known in but five other libraries of the world, Munich, Hamburg, Copenhagen, London and Philadelphia. Torrella's two works on syphilis, both

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very great rarities, are in the Library. The earlier of the two, *Tractatus cum consiliis contra pudendagram*, of 1497, is undoubtedly, says Sudhoff, the most valuable of the early works on this disease. There are only three other copies in the world, one being incomplete. The later work, printed in Rome in 1500, *Dialogus de dolore* etc., is likewise very rare and mostly known in its reprints.

Some of the early works are represented in the Army Medical Library by several successive editions. Thus the Library has seven editions of Saliceto's surgery, eight editions of Henricus de Saxonia's popular work, On the Secrets of Women, formerly attributed to Albertus Magnus, and eight editions of the *Regimen sanitatis* of Taddeo of Florence. All of these editions are incunabula.

These books are mainly of the sort which are now very difficult to acquire. They are not all equally important, but, taken as a whole, the collection is admirably and concisely representative not only of early medical knowledge, but also of fifteenth century typography.

Space does not permit even a hasty consideration of the other treasures of the Library. It contains, for example, a more complete file of French theses than the Library of the Medical Faculty of Paris. Its collection of authors' presentation copies of important works shows the autographs of such figures as Lord Lister, Pettenkofer, Pasteur, Ehrlich, Virchow, Cohnheim, Paget, Koch, to mention a few of the Europeans who have lived but recently.

As Virginians, you will be interested to know that one of the few complete files known of the *Confederate Medical and Surgical Journal* is preserved in the Army Medical Library.

Even before the present building of the Army Medical Library was built, there was the first proposal that the collection of medical literature be turned over to the Library of Congress. The medical profession of the country immediately opposed the scheme, as it has opposed such suggestions ever since. The Medical Society of Pennsylvania, for example, passed resolutions urging Congress to erect a suitable building for the Surgeon-General's Library. "This Society," continued the resolutions, "strongly deprecates any change from the present management of the Library and Museum, and, above all, the severing of these collections by the merging of the power in the National Library as destructive to its utility." This resolution, typical of those passed by various medical bodies, was drawn by no less a man than Professor Samuel D. Gross, while Drs. W. W. Keen and S. Weir Mitchell moved its passage at the meeting of May 10, 1883. Thirty years later we find Dr. Mitchell of the same mind still, for in 1913 he wrote: "The Surgeon-General's Library is a monumental labor which none will ever better."

At first thought it might seem that there is something to be gained by the consolidation of the national medical library with the national general library, but knowledge of the subject and careful study show that such is not the case. Billings realized this as have his successors. In his address on bibliography before the Medical and Chirurgical Faculty of Maryland in 1883, he said that even when but twenty years old the Army Medical Library contained more medical literature than either the library of the British Museum or the Bibliothèque Nationale de France. "This is very largely due to the fact that while the Washington Library is the national collection, it has been kept separate from the general National Library. The result of this has been that the medical profession has taken much more interest in it than they would do if, as in the case of the English and French medical collections, it became merely a section of the National Library. As a matter of fact, comparatively little use is made by medical writers of the collection in the British Museum or the Bibliothèque Nationale. They consult in preference the special medical libraries in London and Paris, which are under the direction of medical bibliographers." That the same conditions prevail in Europe today has been told me by librarians and medical men in those very cities. It is a recognized fact that a highly specialized library invariably suffers when merged in a general library, no matter what attempts are made to keep the specialized collection as an entity.

In America we have before us for comparison, the development of the two largest professional libraries in the country, those of law and of medicine. The Law Library of Congress was established in 1832, the Act of Congress requiring this collection to be maintained as a separate unit in "an apartment near the Library of Congress." The collection has been housed in various places, at present being in one of the wings of the Library of Congress building. The Law Library has frequently been neglected for it has had but little money spent on it, its growth being largely due to copyright, transfers from other government libraries, and international exchange. Sev-

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eral law libraries in the United States are superior to the Law Library of Congress in some fields, while the Harvard Law Library is far larger and superior in every way, containing 435,000 volumes while the Law Library of Congress contains 275,000 (the totals are those of 1933). Contrast this with the growth of the Army Medical Library, which in twenty years passed the medical collections of the two largest general libraries in Europe as well as those in America.

The law librarian of Congress in 1933 wrote: "Undoubtedly, had the Law Library been independent from its foundation in 1832, the government would have possessed the best law library in the world today, instead of it lagging behind, with many serious gaps in the collection." Yet the Law Library of Congress was established a generation before the Army Medical Library. In a circular letter sent out to prospective members of the Friends of the Law Library of Congress, it was proposed to "crystalize sentiment throughout the country to the end that the national law library may obtain all the resources necessary to meet the demand made upon it, *and become as eminent in law as the Surgeon-General's Library in Washington is in medicine*" (italics mine).

The difficulties of the Law Library of Congress, as so well set forth by my friend, Dr. John Vance, the librarian, show what any specialized library experiences when merged in a general library. The situation was well understood by Dr. Herbert Putnam, Librarian of Congress, who, on September 18, 1929, wrote, that he felt that the Army Medical Library should be kept as a unit, being in a specialized field of subject matter. "Even though consolidated with some other library, say a general library like the Library of Congress, it would still require a specialized staff," and should "be administered by those familiar with that field." The Army Medical Library, continued Dr. Putnam, "is one of the various specialized collections—for instance, that of the Department of Agriculture, that of the Geological Survey, that of the Bureau of Education—which form units outside of the Library of Congress, but which in intimate association and cooperation with the Library of Congress, form the National Library of the United States."

Garrison, long a member of the staff of the Library and well-known as one of America's leading medical historians and bibliographers, has this to say of Billings's successors:

"The official management and administration of the great library, the selection and purchase of its books, the selection of material for indexing, the enlargement and improvement of its resources, passed into the hands of the Army medical officers who succeeded Billings. As the cantors of the Thomasschule at Leipzig, the successors of Bach, had to be men learned in counter point, worthy followers of the great seventeenth century music master, so these Army Surgeons have been men specially selected for their scientific and literary attainments. Huntington, one of the collaborators of the Medical and Surgical History of the War of the Rebellion; Merrill, distinguished by his work in ornithology; Walter Reed, a pupil of Welch and discoverer of the causal nexus and mode of transmission of yellow fever; and Walter D. McCaw, who specialized in tropical medicine and added greatly to the unique historical collections of the Library, have all been imbued with the spirit of enthusiasm and the interest in the literary side of medicine which Billings brought into his work."

The following is the complete list of Librarians, with the dates of their service: 1. Colonel John Shaw Billings of Indiana, 1868-1895; 2. Colonel David Low Huntington of Massachusetts, 1896-1897; 3. Surgeon James Cushing Merrill of Massachusetts, 1898-1902; 4. Major Walter Reed of Virginia, 1902; 5. Brigadier-General Calvin DeWitt of Pennsylvania, 1903-1904; 6. Brigadier-General Walter Drew McCaw of Virginia, 1904-1913; 7. Colonel Champe Carter McCulloch, Jr., of Texas, 1913-1918; 8. Brigadier-General Francis Anderson Winter of Louisiana, 1918-1919; 9. Colonel Paul Frederick Straub of Iowa, 1919; 10. Major-General Robert Ernest Noble of Alabama, 1919-1924; 11. Colonel James Matthew Phalen of Illinois, 1924-1927; 12. Colonel Percy Moreau Ashburn of Ohio, 1927-1932; 13. Lieutenant-Colonel Edgar Erskine Hume of Kentucky, 1932-1936; 14. Colonel Harold Wellington Jones of Massachusetts, 1936 to date.

When General McCaw was relieved as Librarian of the Army Medical Library in 1913, as a new law limited the service of any Army officer to four years in Washington at any one time, General McCaw was succeeded by another son of Virginia, Colonel Champe Carter McCulloch, Jr. Though he was born in Texas, both of Colonel McCulloch's parents were from the Old Dominion, so that it is not incorrect to name him as the third Virginian who directed the Army Medical Library. McCulloch was a clever,

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well-educated man whose deep love for books and knowledge of how to use and care for them made him a successful Librarian. He had served in Panama during the days of the construction of the Canal, being executive officer of the Isthmian Canal Commission, and for a time was both Curator of the Army Medical Museum and Professor of Military Medicine and Military Hygiene at the Army Medical School. He was Librarian 1913-1919 and thereafter Department Surgeon of the Central Department of the Army. After his retirement he was health officer at Cumberland, Maryland, until his death.

McCulloch was succeeded by Brigadier-General Winter, who had been in charge of the affairs of the Medical Department of the Army in England during the World War. Colonel Straub, who followed him, was one of the leading spirits in the training of officers and men of his department. He won the coveted Medal of Honor for extreme gallantry in action in the Philippines. Major-General Noble, Librarian shortly after the World War, was the able assistant of General Gorgas in Panama and elsewhere. He had charge of the personnel division of the Surgeon General's Office during the greater part of the World War, a most difficult task. Later he served in the American Expeditionary Force in France. Colonel Phalen had been a division surgeon in France and after the war pursued the command and staff instruction such as is followed by officers of the line. Colonel Ashburn, author of the excellent *History of the Medical Department, U. S. Army,* and many works on hygiene, had been in charge of the Medical Department School in France, and later of the Medical Field Service School in the United States and Professor of Hygiene at the United States Military Academy, West Point.

If you have permitted me to call Colonel McCulloch a Virginian because of his parentage, though he was born in Texas, perhaps you will likewise accept me as a sort of transplanted Virginian, having been born of Virginia lineage in the capital of Virginia's first-born, Kentucky. Thus the Old Dominion has contributed largely towards the administration of the Army Medical Library in its development after the guiding hand of Billings was no longer available. I was assistant to the Librarian from 1922 to 1926, during the administrations of General Noble and Colonel Phalen, and from 1932 to 1936 was myself in charge. So I have had the congenial duty of service in the Army Medical Library longer than any other living Army officer.

In Billings's address, the best he ever wrote, delivered in 1881 before the International Medical Congress in London, he said: "If the entire medical literature of the world, with the exception of that which is collected in the United States, were now to be destroyed, nearly all of it that is valuable could be reproduced without difficulty." The importance of the Army Medical Library, then in its infancy, could hardly have been better expressed. It has grown steadily and greatly, realizing the hopes and dreams of generations, as if in the words of Goethe's *Chorus Mysticus,* the unattainable had at length become a reality.

Perhaps I cannot better sum up the opinion of the medical profession as to the worth of the Army Medical Library than by relating an incident. Not long before his last illness, Dr. William H. Welch paid a visit to the Army Medical Library, or the Library of the Surgeon-General's Office, as it was always known prior to 1922. Dr. Welch was one of the Library's most earnest readers and on many an occasion his advice had been of the utmost help. As he sat in the Librarian's office smoking one of his black cigars, he fell into one of those reminiscent moods which his friends so enjoyed. He spoke of the foundation of this Library, of its growth, of the place it had made for itself in the world of medical science, and then said: "I have been asked on more than one occasion what have been the really great contributions of this country to medical knowledge. I have given the subject some thought and think that four should be named: 1. The discovery of anæsthesia; 2. The discovery of insect transmission of disease; 3. The development of the modern public health laboratory, in all that the term implies; 4. The Army Medical Library and its Index Catalogue, and (he added slowly) this library and its catalogue are the most important of the four".

Dr. Welch was not one to speak lightly or without due thought. The Librarian was so struck with this pronouncement that he reduced it to writing immediately after the doctor had left. To me now it is no less forceful than it was then. Perhaps these words were among the wisest uttered by that wise man.

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REMARKS ON THE DIAGNOSIS AND TREATMENT OF ANGINA PECTORIS.*

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Heart disease has for some time been "captain of the men of death," causing over twice as many deaths as its nearest rival, cancer. It is on the increase and, this is true especially of so-called coronary disease. Coronary thrombosis and angina pectoris are particularly common among doctors. In a recent paper from the Mayo Clinic these two diseases were found to be twice as prevalent in doctors as in any other professional group. We should, therefore, have a keen and personal interest in the subject of this paper.

I wish to call your attention to the fact that in many of the text-book discussions angina pectoris is still confused with coronary thrombosis. "Status anginosis" is the name used in older text-books for what was undoubtedly coronary occlusion. Osler, in his monograph on "Angina Pectoris and Allied States", mentions cases of angina without pain, anginal attacks with cardiac asthma, tobacco angina and pseudo-angina. Today we rarely hear the term pseudo-angina; instead, we speak of cardiac neurosis and of neuro-circulatory asthenia with precordial pain. Likewise, many doctors do not distinguish clearly in their own minds between angina pectoris and coronary occlusion. One is a functional disorder, the other an organic one; one is a syndrome seen in many varied conditions, the other is a definite disease. Of course, the treatment of the two is radically different. In the second edition of Cecil's Medicine (1930) it is stated that the drug of choice in relieving paroxysms of anginal pain is morphine. This, of course, is not true—a quick acting nitrite is the drug of choice. Morphine *is* the drug of choice, however, for coronary occlusion.

Now for a note on the history of these two disorders. Angina pectoris, breast pang, or stenocardia, was first brought to the attention of the medical profession by William Heberden, an English physician. His description of the disease was first published in "The Medical Transactions of the College of Physicians," in 1768. In his description he shows clearly that he was well acquainted with the disease, having seen over a hundred cases. The following quotations from his paper show his keen powers of observation.

"The angina pectoris, as far as I have been able to investigate, belongs to the class of spasmodic, not inflammatory complaints, for,

In the first place, the access and recess of the fit is sudden.

Secondly, There are long intervals of perfect health.

Thirdly, Wine and spirituous liquors and opium afford considerable relief.

Fourthly, It is increased by disturbances of the mind.

Fifthly, It continues many years without any other injury to the health.

Sixthly, In the beginning it is not brought on by riding on horseback, or in a carriage as is usual in disease arising from scirrhus or inflammation.

Seventhly, During the fit the pulse is not quickened.

Lastly, Its attacks are often after the first sleep, which is a circumstance common to many spasmodic disorders.

"With respect to the treatment of this complaint I have little or nothing to advance, nor indeed is it to be expected we should have made much progress in the cure of a disease which has hitherto hardly had a place or a name in medical books. Quiet and warmth and spirituous liquors help restore patients who are nearly exhausted, and to dispel the effects of a fit when it does not soon go off. Opium taken at bed time will prevent the attack at night. I knew one who set himself a task of sawing wood for half an hour every day and was nearly cured. In one also the disorder ceased of itself. Bleeding, vomiting and purging appear to me improper."

The first description of a case of coronary occlusion was by a St. Louis physician of German birth, Adam Hammer. He was on a visit to Vienna in 1876 and was asked by a friend to see a patient with him. He found a marked disturbance of the heart rhythm and force, and although he had never heard of such a condition he made an antemortem diagnosis of thrombosis of one of the coronaries, which was

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proved at autopsy. His paper was published in 1878 in the *Wiener Medizinische Wochenschrift,* and was entitled "A Case of Thrombotic Occlusion of One of the Coronaries of the Heart, at the bedside diagnosed and communicated by Dr. A. Hammer, Professor of Surgery from St. Louis, at present in Vienna."

I will not go into the many theories of the cause of the pain that have been advanced and discarded. At the present time it is generally accepted that an anoxemia of the heart muscle is responsible. This explains all of the known facts regarding the conditions associated with precordial pain and the precipitating causes of the pain.

What are some of the conditions in which cardiac pain occurs? In the first place, there is a large group of cases of effort syndrome or neuro-circulatory asthenia—also called soldier's heart, irritable heart, disordered action of the heart (D.A.H.). In these cases there is an imbalance between the sympathetic and vagus control of the heart rate and the heart beats unusually fast at rest and more so following exertion or excitement. This over-activity of the heart calls for an increase in the blood supply which is presumably not adequately supplied in some cases, thus causing a relative anoxemia and pain. Excess tobacco and coffee are known to cause cardiac pain in some cases. A number of organic diseases of the heart produce cardiac pain, e.g., pericarditis, mitral stenosis, syphilitic aortitis, hypertension. In syphilitic aortitis the luetic process involves the mouth of the coronary arteries, causing narrowing and diminished blood flow. In the other conditions there is increased work of the heart and relative anoxemia. Some cardiac arrhythmias cause heart pain, e. g., paroxysmal attacks of auricular flutter, paroxysmal tachycardia and auricular fibrillation. Severe anemia may be associated with anginal pain. In this last case there is no decrease in blood flow through the coronaries as there is when the heart beats very rapidly, but the quality of blood is defective and inadequate to furnish proper oxygen to the cardiac musculature.

There is another group of conditions in which there is an increase in the metabolism of the body and of the heart muscle. Thyrotoxicosis is the outstanding example. Cardiac pain is not unusual in very toxic cases, and is due to an increase in the work of the heart, with a lack of corresponding increase in the blood flow. Some cases of myxedema under thyroid medication develop heart pain. Here the mechanism is the same; the heart muscle is not able to respond to the increased demands of the body due to its low metabolic activity. It is wise to proceed slowly in giving thyroid to any long standing case of myxedema. I have recently had such a case,—a man 56 with a B. M. R. of minus 44 when treatment was begun. He was given four grains of Armour's thyroid daily and a short time later began having precordial pain with radiation to the left arm, coming after exertion, in short, symptoms of angina pectoris. He was cautioned to avoid as far as possible anything that might cause pain and the dosage was reduced. After about six or eight weeks the thyroid was gradually increased and he is now taking five grains daily with no cardiac pain, his B. M. R. being minus eighteen. Epinephrine increases the work of the heart, constricts the coronaries, and may cause anginal pain. It is a dangerous drug to use in elderly cases with a history suggesting coronary sclerosis. Insulin is also known to cause attacks of angina pectoris and of coronary thrombosis.

In addition to the classes of patients mentioned above, there is a group where we can find none of these causes for the anginal pain; the term angina pectoris should really be reserved for this latter group. Presumably there is either coronary sclerosis or coronary spasm or both as a cause of their pain.

I will not go into a minute description of the symptoms of angina pectoris; but there are a few points I wish to emphasize in the differential diagnosis: First, the character of the pain. We can tell very little by the severity of the pain; it may vary from an agonizing one to the slightest discomfort. We can tell a great deal, however, by the location of the pain. We are prone to place too much emphasis on the unusual sites of angina pain, such as in the epigastrium, in the neck, shoulder or even the back, while we overlook the fact that in the large majority of cases the pain is, not precordial but presternal. This is a very important point; as a rule, the patient who complains of attacks of pain only over the cardiac area to the left of the sternum or only in the axilla does not have angina. The most common radiation of the pain is down the inner side of the left arm, sometimes both arms. Often there is an associated numbness of this area.

Besides the severity, location and radiation of the pain, we wish to know the duration, whether it begins and stops suddenly or not, and what brings it on.

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Anginal pain usually begins rather quickly and ceases in a few minutes if the patient rests. It is brought on usually by exertion or excitement, and the same degree of exertion will as a rule produce it again. Patients will frequently tell us just exactly how far they can walk before the pain strikes.

Now what does the patient do when the pain strikes? He will stop whatever he is doing because he has found from experience that this is the quickest way of obtaining relief. I can remember only one case who felt that he could work the pain off. The sense of impending death has been over-emphasized and is not at all constant. Likewise, the sense of constriction or pressure is by no means constant.

The age and sex and the family history are of great importance. Angina pectoris is extremely rare under forty and practically never seen below thirty. Statistics show that angina occurs approximately four times as often in men as in women. There is very often a history in other members of the family of angina pectoris, coronary occlusion, sudden death or a "stroke".

The therapeutic test with the nitrites is of great help. True angina pectoris is nearly always relieved within a minute after placing a tablet of nitroglycerine under the tongue. Hypodermic tablets are best and they should be fresh, not over two months old. One one-hundredth of a grain is the usual dose. Let us remember that the nitrites act on smooth muscles in general and may relieve gall-stone and other colics.

What of the value of physical examination and instrumental tests? It is relatively little in proportion to the history. In the majority of cases we find some elevation of the blood pressure and evidence of arteriosclerosis. There may be an accentuated aortic second sound and there may be evident enlargement of the heart. On the other hand, physical examination of the heart may be normal in every respect. The electrocardiogram is normal in approximately half of the cases. The other half will show evidence of myocardial changes or left axis deviation or both.

Differential Diagnosis.—It might be well here to say a few words concerning other conditions most commonly confused with angina pectoris. The following list is not complete. These are, roughly, in the order of their frequency:

1. Indigestion, heart burn, "gas pains", etc.
2. Cardiac neurosis, neuro-circulatory asthenia.
3. Premature beats.
4. Organic heart disease.
5. Gall-bladder disease.
6. Hypertrophic arthritis.
7. Pleurisy.
8. Intercostal neuralgia.
9. Toxic effects of tobacco or coffee.

It would be easy to give cases illustrating each of these conditions. Intercostal neuralgia is a much abused diagnosis. As a rule, these cases are either a segmental neuritis from hypertrophic arthritis or are true angina. Herpes zoster followed by intercostal neuralgia is a relatively rare condition.

Treatment.—First, let us be sure of our diagnosis. Many a cardiac neurosis has been fostered and nourished by the well-meaning but mistaken attending physician.

Considering the treatment, we must tell the patient in a sensible way just what his trouble is. Never should we use the word angina to the patient. This word strikes terror to the heart and connotes impending sudden death. Dr. William Stroud says we should tell the patient he has "relative anoxemia of the myocardium". I have had no difficulty in explaining to a patient that exercise or excitement calls for an increased work and blood supply of the heart and that the arteries do not supply enough blood at the time when the pain occurs. Of course, a responsible member of the family should immediately be told of the uncertainty of the disease and the liability to sudden death at any time. All of our therapeutic efforts are aimed at prevention and relief of the attacks of pain. It is necessary to go carefully into every detail of the habits and activities of our patient. The diet should be light and nutritious, avoiding bulky foods. A five meal diet is sometimes worth while. We know that attacks are prone to follow a heavy meal with over-distention of the stomach. I have known patients to use the stomach tube themselves in order to relieve the pain. One patient often has an attack when she drinks any very cold liquid. Over-weight patients should be reduced—to lessen the work of the heart. Dr. Kerr, of San Francisco, has reported relief of anginal attacks in over-weight patients by the wearing of a firm elastic abdominal belt. This aids respiration by raising the diaphragm during expiration. Many of these cases were able to dispense with the belt after a weight reduction schedule.

Now as to the liquid diet. Alcohol in moderation is not harmful; it may even be helpful in relieving

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or preventing an attack. Coffee, tea and coca-cola are best avoided; they increase the heart rate and the work of the heart. For the coffee addict, Sanka or Kaffee Hague is worth trying, or we might allow one cup of real coffee in the morning. Water need not be restricted; very cold drinks sometimes cause an attack. In this connection, it is interesting to recall that a cold drink may cause inversion of a normal T wave in the electrocardiogram.

Tobacco, in my opinion, is definitely harmful. We know that it causes vasoconstriction and we also know there are occasional cases of tobacco angina which are completely cured by leaving tobacco alone. One need not, however, be too severe in this restriction; some nervous tense individuals are undoubtedly calmed down by an occasional cigarette. My own feeling is that we should not be dependent on any kind of stimulant. We never missed tobacco before we began smoking, and if we stopped we would soon be in that same position again. I know a man who has anginal attacks of such severity that morphine and hyoscine are necessary for relief, and yet, against the advice of several doctors, he continues to smoke a pack and a half of cigarettes daily! Such is the power of the weed or the weakness of the human will, which ever you please.

What about exercise? Too much is harmful, but in moderation it is probably beneficial. It is well to tell your patient to stop just short of the point that produces pain, and always to stop at the first sign of pain. It seems that the reflex which is responsible for the pain is produced more readily with each repetition of the inciting factor. We should instruct our patients to walk slowly, never run, avoid hills and steps. It is well to live on the first floor. Where this is impossible, we might consider the advisability of having an inclinator or small elevator installed. One of my patients had a very clever contrivance whereby she could negotiate any steps with the aid of a companion. It worked on the lever principle and raised her one step at a time.

Cold and windy weather are bad for the anginal patient and such exposure should be avoided if possible. Where the expense is no consideration, it may be advisable to follow the example of the birds and go south in the Winter.

We should caution our patients to avoid all unnecessary physical exertion and excitement. A rest after the midday meal is advisable and nine or ten hours rest in bed at night. They should avoid lifting and hurrying, arguments and exciting games, should not attend parties in the evening, and should avoid crowds.

Now we come to the use of drugs. First and foremost are the members of the nitrite family. An English physician, Sir Lauder Brunton, was the first to use amyl nitrite for the relief of anginal pain in 1871, and in 1879 Murrell first used nitroglycerine which has several advantages over the former drug. It is best given in hypodermic tablet form to be always carried by the patient and used at the first indication of an attack. I have already mentioned that it should be fresh; it would be helpful if the manufacturers were required to date this drug as they do the biologicals. 1/100 gr. is the dose usually prescribed, but some patients will find that 1/200 gr. will give them the same relief without the headache that frequently follows the larger dose. It should be crushed and swallowed but will also act if placed under the tongue. If effective, it will act usually in less than a minute. If no relief is obtained in three to five minutes it may be repeated and there seems to be no danger in repeating it many times a day. Some tolerance to the drug is eventually established and such cases may require the use of 1/50 gr. tablets or perhaps the use of spirits of nitroglycerine and a dropper. In cases with many attacks each day it may be helpful to use the tablets every two or three hours regardless of whether pain is experienced or not. In this way the patient is kept much more comfortable. There is another point worth remembering: In cases where some unusual effort or excitement is unavoidable, it is often best to take a tablet beforehand. In this way a flight of steps may be negotiated or a board meeting presided over with safety.

The other drugs of proven value in angina pectoris are few. For relief of the attack alcohol is a remedy that is usually available and often effective. In some severe cases nitroglycerine is not very effective and we may be obliged to use an opiate. Inhalations of trichlorethylene may be helpful, but this drug has proved disappointing as regards reducing the number and severity of the attacks. A sedative at night may be of value in cases subject to nocturnal attacks. Phenobarbital 1/2 to 1 1/2 gr. is most commonly employed. The xanthine derivatives are used very widely to prevent attacks and are of considerable value in my experience. Theobromine frequently causes palpitation and excitement. Theophylline is

the best—it acts more on the blood vessels and less on the brain than theobromine or caffeine, another member of this group of drugs. Theophyllin ethylene diamine, or aminophyllin, is the drug of choice. It is most often used in the form of 1 1/2 gr. tablets three times a day. It should be dissolved in a glass of water and taken preferably one hour before meals to avoid interference with digestion. As for the use of the various tissue extracts, they have been found to be of no practical value. In the cases in which I have used them I have seen no benefit whatsoever, and this is the general experience of others who have tried them.

I have not mentioned digitalis. This drug has been known to aggravate angina pectoris, and it is usually stated that its use should be reserved for those cases where definite signs of congestive failure are present. This is certainly true after an attack of coronary thrombosis. On the other hand, I can see no harm in trying it in angina pectoris and feel sure that many cases will be benefited by its use.

When other diseases are associated with angina pectoris they should be treated, for example, syphilis or diabetes. A word of caution is necessary in the case of diabetes. A diabetic with angina is best not treated too vigorously for diabetes—they are better off when allowed to run a little sugar, rather than to run the risk of hypoglycemia, because attacks of angina pectoris or even coronary thrombosis are often produced by hypoglycemia.

There are several other procedures of occasional help. Sometimes an attack can be warded off by voluntary deep and rapid breathing for a minute or two. Some severe cases are benefited by spending one day a week in bed. Hot applications to the chest may give some relief. For cases that are subject to nocturnal attacks, erythrol tetranitrate 1/2 gr. at bedtime may be of value. A small dose of codeine or morphine at bed-time may likewise prevent these nocturnal attacks.

In severe cases where pain occurs following the least exertion and the patient is severely handicapped, we should consider some surgical procedure to interrupt the pain pathway. The only surgical procedure used to any extent today is the injection of the posterior nerve roots with alcohol. This, in the hands of an experienced surgeon, is without much risk and, if successful, may give relief for from three to six months. Sometimes a painful intercostal neuritis follows but this does not last long. Thyroidectomy for the relief of anginal pain seems to have failed to live up to expectations and is rarely done at present.

There is a certain group of cases that deserve special comment. Several papers have recently appeared regarding this, i.e., threatened coronary occlusion. When a patient suddenly begins having repeated attacks of anginal pain and yet has none of the signs of a coronary occlusion in the way of increased sedimentation rate or characteristic electrocardiographic changes, we are justified in assuming that an occlusion is threatening or imminent. These cases should be put to bed and treated just like a case of coronary thrombosis. A certain number will go on and have a closure of a coronary artery. When this occurs in a patient who has been for some days at rest, the mortality is very low, as Masters has shown. Others will after a few weeks rest stop having the seizures and escape this catastrophe. I have seen several such cases.

In conclusion, I should like to emphasize several points in the treatment of angina pectoris. First, tell the patient what is wrong without using the term angina, so that he will understand how to take care of himself. Second, we must go into the patient's personal habits and daily life in detail so as to help in every possible way to avoid the attacks. Lastly, we must treat each case individually, and remember that we have a large choice of therapeutic measures at our disposal—if one does not help, another may.

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ESOPHAGEAL DIVERTICULUM.*

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There are two types of diverticula that arise from the lateral wall of the esophagus, namely, the traction and the pulsion type. Although the former—the Lanier-Hackerman type—is generally considered a diverticulum of the esophagus, in reality it is not a true diverticulum. It is a dilatation, the result of traction caused by extraesophageal pathology. All layers of the esophagus are involved, and this type invariably occurs within the thorax. The type to which we shall limit our remarks is the true, or pulsion diverticulum. As far as we know, it occurs only in the extrathoracic portion of the esophagus and is a true diverticulum, the wall of the sac consisting only of mucous membrane.

ETIOLOGY

At the lowermost end of the pharynx, where the inferior constrictor muscles of the pharynx and the transverse and oblique fibers of the cricopharyngeal

No. 1—Showing esophageal diverticulum presenting on the left side of the esophagus and trachea.

muscle join to form the proximal end of the esophagus, there is always a congenitally weak spot in the posterior wall of the alimentary tube. It is here that the sac of the true or pulsion type of esophageal diverticulum always develops as a gradual protrusion of the membranous lining through the muscular coats. The accepted theory of the causation of the protrusion is that under increased intraesophageal pressure during deglutition, the mucous membrane is forced through the weak spot which is always located posteriorly and at the level of the cricoid cartilage in the neck.

No. 2—Showing esophageal diverticulum presenting on the right side of the esophagus and trachea.

The physiologists tell us that the upper opening of the esophagus closes during deglutition in order to permit the passage of food downward to the stomach; otherwise, regurgitation would occur. There is a strong downward peristaltic wave produced by the musculature of the esophagus, and when food is poorly chewed and rapidly swallowed, the intraesophageal pressure is abnormally increased. Under these conditions increased tension is brought to bear on the congenitally weak spot. As the sac develops, it lies just in front of the cervical vertebra between the prevertebral and pretracheal fascia, and, in the

*Read before the seventieth annual session of the Medical Society of Virginia, at Richmond, October 3-5, 1939.

majority of cases, presents itself in the left side of the neck posterior to the thyroid gland and internal to the carotid sheath. As the sac enlarges and becomes distended with mucus and food, it extends downward between the planes of cervical fascia into the upper thorax. Not infrequently such a sac becomes so large that it may be found behind the clavicle or the sternum, and in rare instances may extend several inches within the thoracic cavity. When such a sac is completely emptied, however, it usually rises into the neck and diminishes materially in size.

PATHOLOGY

The sac varies greatly from a very small pouch to one which may be sufficiently large to occupy a considerable portion of the upper mediastinum. As the sac increases in size the unyielding resistance of the cervical vertebra causes it to push forward. The esophagus, as a result, is pushed forward and partially rotated on its long axis so that its lumen below the opening of the sac is reduced to a slit. Also, the larynx and trachea are pushed forward until the limit of expansion of the cricoid cartilage is reached in front. Further expansion must then take place laterally, and since the esophagus normally deviates to the left, it is usually on this side that it occurs. Having once fully developed, such a sac is practically never entirely empty of retained and decomposed food. As a result, one is not surprised at finding inflammatory changes, ulceration, and occasionally malignant degeneration in the walls of a diverticulum of long standing. The larger the sac, the thicker the walls, the more apt it is to be adherent to surrounding tissues. The lining is composed of stratified squamous epithelium and there may or may not be a muscularis mucosa. The real thickness of the wall is supplied by the tunica propria which is derived from the pharyngeal fascia. Between this and the lining membrane is loose areolar tissue, and close to the neck of the sac there may be a few muscle fibers which have been pulled down from the cricopharyngeal muscle. As a result of overflow of fetid material from the sac which is sometimes aspirated, such complications as bronchiectasis, pneumonia and pulmonary abscess are not uncommon.

SYMPTOMS

The first symptoms of esophageal diverticulum are those related to stenosis. The patient complains of an excess of saliva in the throat, associated with a constant irritable cough and occasionally dyspnea. The excess of saliva may be explained by the escape of the contents of the sac into the pharynx, and the irritable cough and dyspnea by pressure of the sac on the recurrent laryngeal nerve. Swallowing becomes progressively more difficult and is associated with regurgitation of food some hours after eating. As the

No. 3—Lateral view of esophageal diverticulum projecting into thorax.

sac increases in size the earlier symptoms become exaggerated because of pressure on the lateral wall of the esophagus. Furthermore, as the neck of the sac elongates, it becomes more and more difficult for the sac to empty itself. Its weight is increased, and as a result of traction from the downward pull, the axis of the esophagus is often changed. So, with the axis of the esophagus changed, the opening reduced to a small slit, and the esophagus itself partially collapsed from external pressure, the act of swallowing becomes progressively a more formidable procedure. Mucus and food accumulate in the sac and it is rather common for a patient to state that he re-

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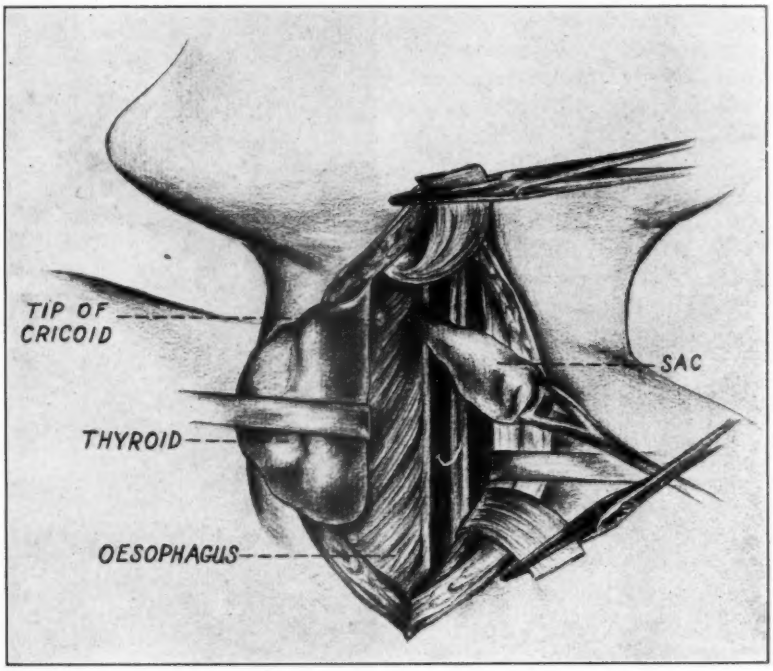
gurgitates food swallowed two or three days previously. Pain is a frequent symptom, and is relieved by the ejection of food and mucus from the sac. If there is a visible mass in the neck, the sac can sometimes be reduced by pressure and manipulation, which is accompanied by a gurgling or squash-like sound as the food, mucus and air regurgitate into the pharynx.

This procedure is often facilitated by lowering the head at the same time that pressure is made upon the neck.

period of time, when they finally reach the surgeon they present more often than not a marked state of inanition. It is common for the patient to state that there has been a loss of from twenty to forty pounds of weight.

Of all diagnostic signs, the most reliable can be elicited by the use of X-ray. Both fluoroscopic and flat plate examinations should be employed. In the presence of a true diverticulum of the esophagus, by means of the fluoroscopic screen one can see the barium mixture, when swallowed, immediately fill



No.4—Drawing illustrating neck of esophageal diverticulum located at the level of the cricoid cartilage.

A valuable sign which I have found most useful both in diagnosis and in identifying the sac at the time of operation was first discovered and employed by Dr. Willard Bartlett. It consists of having the patient hold the nostrils with mouth tightly closed. Instructions are then given to blow hard, just as one would do when forcing air through the eustachian tube. By this means an empty esophageal diverticulum can be made to fill with air and thus become more prominent in the neck.

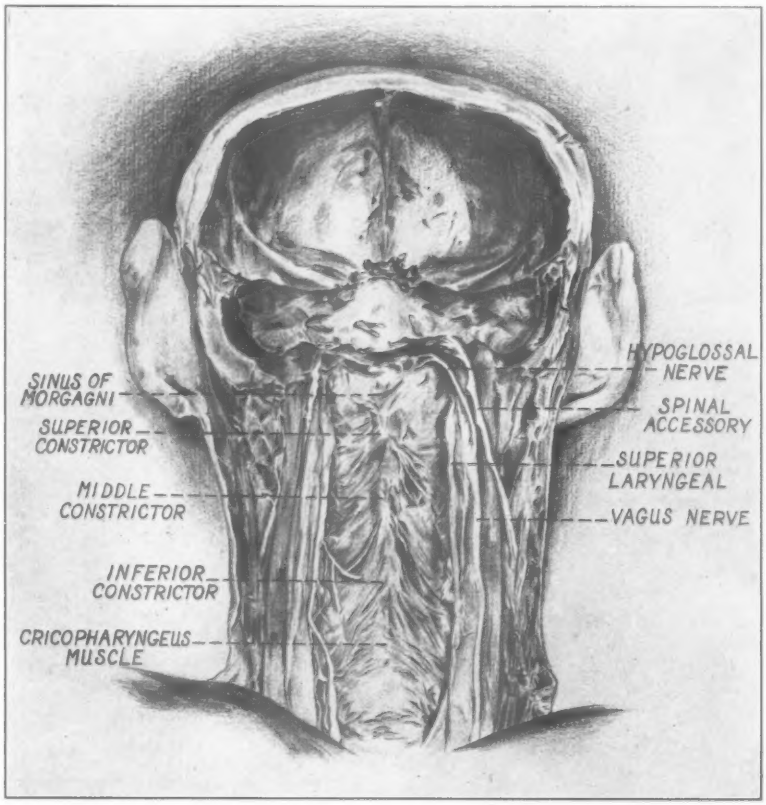
Because of the fact that these patients usually have had such difficulty in swallowing, often over a long

the sac. If more barium is then given it can be seen to pass without difficulty by the sac and continue down the esophagus into the stomach. In all other forms of esophageal obstruction the barium mixture does not pass readily into the stomach, but is seen as a fine line along the course of the esophagus, both by fluoroscopic and flat plate examinations. In case of true diverticulum there is no line of bismuth shown along the course of the esophagus by the flat plates. This is due to the fact that once the diverticulum is filled, the remainder of the barium mixture passes freely downward into the stomach. Before X-ray was

employed in the diagnosis of these cases, many of theme were diagnosed stricture of the esophagus or cancer, and often gastrostomy was performed to prevent starvation.

TREATMENT

The treatment of pulsion diverticulum of the esophagus should always be surgical, and operation should be performed as early as possible, except in rare instances where there may exist some definite contraindication. However, one should ever remain cognizant of the fact that any operation upon the esophagus is serious, and is accompanied by more or less risk. The viscus is not easily accessible, especially the thoracic portion. The wall of the sac is usually quite thin and the contents are highly infectious. The approach to the sac is through the cellular tissues of the neck, and if leakage takes place before protective adhesions have formed there is nothing to prevent infection spreading down between the fascial planes into the posterior mediastinum. The blood supply is poor, which makes healing an uncertainty, and where the blood supply has been interferred with, sloughing is prone to occur. The recognition of these facts and a proper regard for their importance has enabled various surgeons to develop technical procedures which, when carefully applied, have to a great extent overcome these hazards. That the latter is true is borne out by the excellent results which have been reported in recent years by Lahey, Jackson, C. H. Mayo, Judd and others.



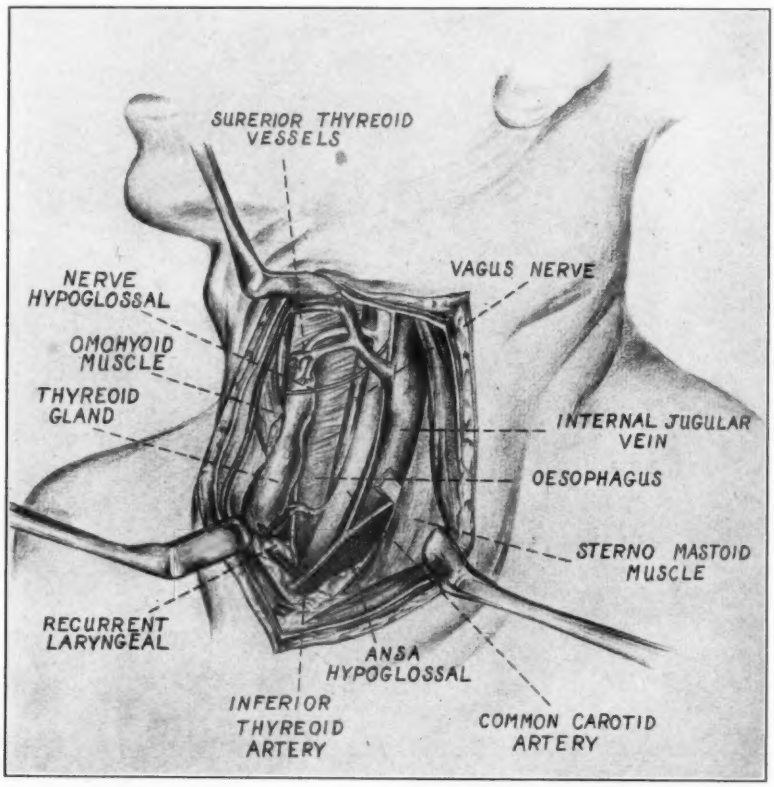
No. 5—Sketch of anatomical dissection illustrating the point of muscular weakness where the inferior constrictor joins the transverse and oblique fibers of the cricopharyngeal muscle. At this point the esophageal diverticulum emerges.

Such therapeutic procedures as irrigating the sac, dilating the esophagus with sounds, or wearing a string over which metal olives may be passed, have become obsolete. The most that one could hope to accomplish by such treatment would be palliation,

and, furthermore, actual harm may be done. First, one must remember that the esophagus is easily ruptured in these cases, and, second, that even the slightest temporary improvement may give the patient false encouragement and lead to postponement of operation until the sac has become much larger and the general state of inanition is far advanced.

Quite naturally, attempts have been made to develop a technique by which the sac could be inverted and tied off through an esophagoscope and soon became evident that it was impracticable where the sac was large, and that in all cases it was dangerous.

At the present time it is generally conceded that the only satisfactory way of treating pulsion diverticulum of the esophagus is to remove the sac. The chief surgical contention is whether the operation should be performed in one or in two stages. According to Jackson and Babcock, in selected cases the one-stage operation is preferable. They claim



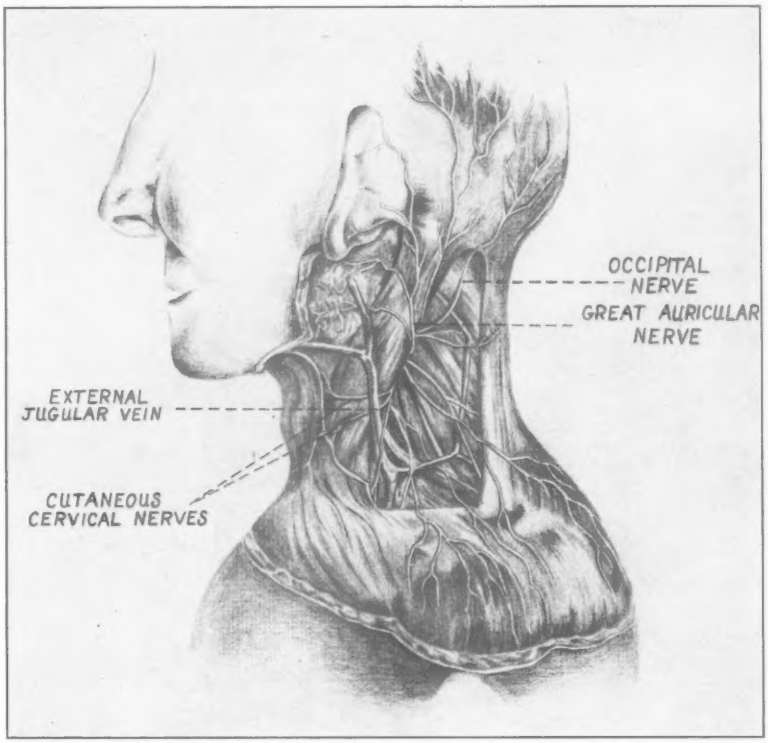
No. 6—Drawing of anatomical dissection illustrating the method of approach and the structures involved in the operation for rupture or diverticulum of the esophagus.

thus avoid the dangers of cutting across the fascial planes of the neck. These attempts, however, were accompanied by a high mortality rate and at the present time have been practically abandoned.

Of the earlier operations, the method of Girard, which consists of invaginating the sac, suturing the esophageal walls, and allowing the sac to atrophy and slough off within the esophagus, gave promise of being a satisfactory way of handling these cases. This method was revived by Bevan in 1917, but it that it can be performed through a small transverse incision, that it limits the amount of trauma and exposure of tissue, that no important structures are divided, that accurate, very delicate suture of the neck of the sac prevents contamination, and that it spares the patient the inconvenience of the two-stage operation. On the other hand, Murphy, C. H. Mayo, Judd and Lahey have all been strong advocates of the two-stage procedure. In an excellent review of the subject, Maes states, "for the occasional surgeon

there can be no question that the two-stage operation is the method of choice, and even the expert surgeon, in the opinion of the reviewer, would do well to confine himself to it."

The primary object of performing the operation in two stages is to allow the fascial planes of the neck to become occluded, thus protecting the mediastinal space before these tissues are exposed to contamination from the lumen of the sac. This can usually be accomplished by carefully and completely dissecting the diverticulum down to its neck and implanting the sac at a higher level in the wound as the first stage. Seven to ten days later, after adhesions have sealed off the fascial planes, the extirpation of the sac can be done with safety.



No. 7—Drawing (modified after Labatt) showing the nerve supply involved in cervical block anesthesia.

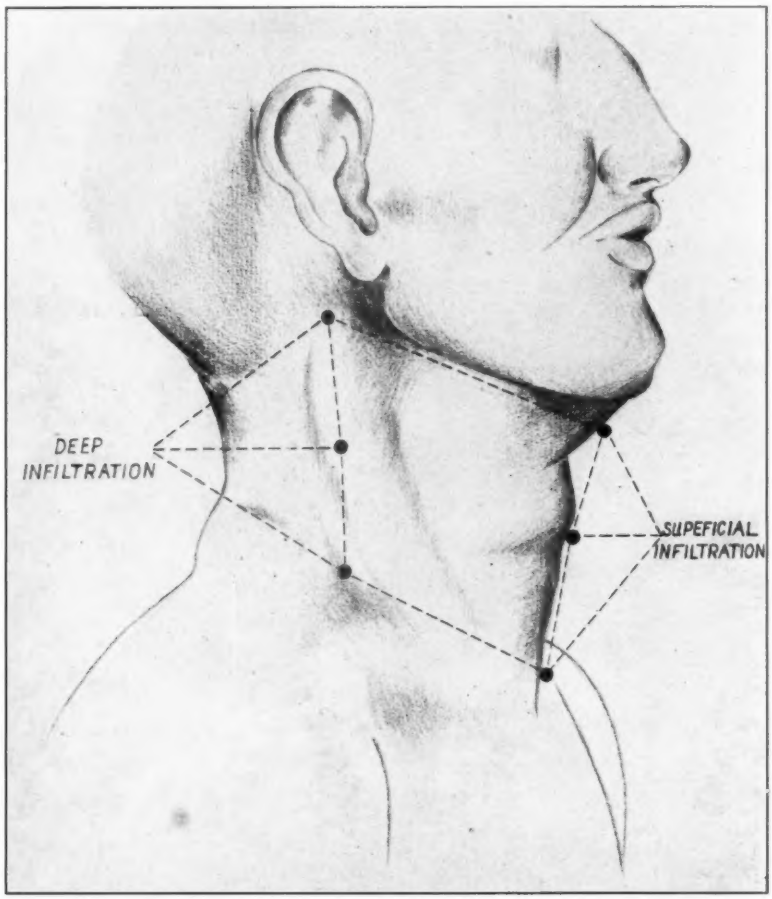
ANESTHESIA

The type of anesthesia employed when operating upon a patient for diverticulum of the esophagus has a direct bearing not only upon the immediate risk of operation, but quite definitely upon the ease and precision with which the surgeon is able to perform the operation. It therefore behooves one to weigh the problem from many angles before making a choice. Some surgeons prefer rather deep narcosis combined with regional infiltration, while others feel that intratracheal anesthesia is the method of choice. In our practice rather mild sedation combined with local infiltration has proved to be quite safe and satisfactory. We prefer this method because of the fact that these patients are more often than not elderly or at least generally debilitated, and, therefore, are poor subjects for deep anesthesia. Furthermore, under general anesthesia it is impossible to carry out the method of Bartlett in detecting the sac, a procedure which we have found most useful.

To successfully operate under local block, one must have a definite knowledge of the nerve supply of the region. The soft tissues of the anterior portion of the neck are supplied by the second, third and fourth cervical nerves, the terminal branches of which emerge along the posterior border of the sternomastoid muscle. Infiltration of these branches along the

posterior border of the muscle supplies anesthesia of the skin, but not to the deeper structures of the neck. It is therefore necessary to reach these nerves at their point of exit from the spinal column which is on a level with the transverse processes of the third, fourth and fifth vertebrae in order to obtain sufficient deep anesthesia. To attain this depth one should use a needle which is at least 6 cm. in length.

just posterior to the sternomastoid muscle. The needle is inserted downward until the bone is encountered, and the soft tissues infiltrated with 1 per cent novocain as it is gradually withdrawn, outward to the skin. In addition, the superficial tissues should be infiltrated from the midline posteriorly along the mandible, downward to the episternal notch and thence laterally above the clavicle. This blocks the



No. 8—Drawing showing points of deep and superficial infiltration necessary in operation on esophageal diverticulum under local anesthesia.

The first point of injection is one finger-breadth below the tip of the mastoid and on a line with the angle of the jaw (see illustration). The second point is 5 cm. lower, just anterior to the posterior border of the sternomastoid muscle and on a line with the superior border of the thyroid cartilage, and the third point of injection is 5 cm. below the second, on a level with the sixth cervical transverse process and sensory branches which come from the facial nerve above and the filaments from the third cervical nerve from the opposite side.

This anesthesia has proved to be quite sufficient in all types of operation for esophageal diverticulum. Though the mucosa of the esophagus is sensitive to heat and cold, it is insensitive to pain. However, in freeing large, deeply situated, intrathoracic sacs, one

may encounter severe pain for a few minutes which occasionally necessitates resorting to a brief administration of anesthetic gas.

TECHNIC

The diverticulum is usually most easily approached by means of an incision along the anterior border of the left sternomastoid muscle at the level of the cricoid cartilage. The region of the esophagus is then exposed by carefully displacing the lobe of the thyroid medially, and the carotid sheath with its contents, laterally. To accomplish this step, it is often necessary to ligate the middle thyroid vessels and sometimes the inferior thyroid artery. The sac can then be identified and by gentle traction delivered up into the incision. In case there is difficulty in identifying the sac, it may be easily inflated by the method of Bartlett, which we have already described. Meticulous care should be taken in dissecting the sac from surrounding tissues, and particularly so as its neck is approached. The sac is then fastened by a few silk sutures to the sternomastoid muscle or the skin so that the fundus is higher than its neck. In the case of a very small diverticulum, it may be sutured to the pre-thyroid muscles. After seven to ten days the sac may be excised, the neck of the sac closed by a few interrupted sutures, and the wound of approach left open to drain.

It has come to the author's knowledge that two operations for small esophageal diverticuli were never carried beyond the first stage in which the fundus of the sac was elevated in the wound at a higher level than its neck. Because of complete functional relief the surgeon operating in these cases decided to withhold the second operation in which the sac would be removed. This procedure would raise many questions for debate, but it is worthy of consideration under some extenuating circumstances.

Following the second stage in which the sac is removed, it is quite common that a fistula develops through which nourishment escapes, in the act of swallowing from the esophagus, and drains on to the neck. This is the one disagreeable postoperative complication in these operations. Whether removal of the sac is done at the first or second stage, this complication of esophageal fistula can usually be prevented, or its disagreeable features overcome, by the introduction of an indwelling nasal tube into the stomach before either the first or second stage operation is undertaken. By this means the oral administration of nourishment is obviated, yet the patient can receive nourishment in sufficient quantities over a period during which healing of the opening in the esophagus and in the wound of approach can take place without soiling. Sometimes one finds that it is impossible to pass a nasal tube into the stomach before either operation is undertaken. Under these circumstances one will find that, during the operative dissection and after the sac has been well isolated, it will then be easy to introduce the nasal tube down the esophagus by the aid of the operator's manipulation in the wound, thereby guiding the tube by the point of obstruction. If the operator finds that for one reason or another he has not been able to pass the nasal tube down the esophagus into the stomach, he may then successfully controvert the difficulties and dangers of esophageal leakage by doing a jejunostomy, thereby making it possible to withhold all fluids and nourishment from the oral tract. In one of our cases extenuating circumstances forced us to utilize this procedure with the gratifying result that the esophageal fistula yielded only a slight discharge for about three days and the operative wound had healed sufficiently to permit taking food by mouth freely on the tenth day.

With regard to postoperative dilatation of the esophagus after the removal of the diverticulum, there is still considerable debate over the necessity of this procedure. In any event, it should not be undertaken unless there is some definite sign of obstruction in swallowing, and, furthermore, it should not be attempted for thirty days after the operation. Dilatation with a woven bougie is the accepted method, and this must be done without force and with extreme caution. Most of these cases will secure sufficient dilatation through the swallowing of the heavier types of food, especially meats, and though they experience a certain amount of obstruction in the first few weeks after operation, this usually is soon overcome. Perforation of the esophagus by bougie or esophagoscope is by no means an uncommon occurrence, and it is needless to add that this is a serious catastrophe. If perforation from instrumentation should occur, it can be recognized immediately by the escape of air from the esophagus into the tissues of the neck. Usually this emphysema can readily be recognized by palpation, but if there is any doubt, definite determination can be made by X-ray films. It seems needless to add that if this catastrophe

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should develop, immediate operative drainage of the posterior mediastinal space should be carried out by the usual approach through the neck, and the patient placed in an exaggerated Trendelenburg position for several days. If operation is delayed even a few hours infection may spread into the posterior thoracic mediastinum and result fatally. We have observed one such case in which diagnostic esophagoscopy was undertaken and rupture of the esophagus was produced. This patient did not come under our care until twenty-four hours after the esophagoscopic manipulation, and death resulted in about seven days.

Our experience with the surgical care of esophageal diverticula is limited to seven cases. One of these, as above mentioned, died as a result of diagnostic investigation with the esophagoscope. The other six were all operated upon successfully and are now living and well, over a period of nineteen years in the oldest of these, and approximately one year in the most recent case. It is quite natural to the inexperienced surgeon that the operative cure of these problems should seem to be formidable. As a matter of fact, after a surgeon has operated upon two or three of these cases the apparent difficulties disappear, and one can be reasonably assured that an esophageal diverticulum can be removed with complete cure and without mortality. This knowledge should be more widely emphasized, for it is common experience to have the family physician delay advising the patient to have surgical intervention, over a long period of time, because of his unfounded fears concerning a favorable outcome.

Medical Arts Building.

DISCUSSION

DR. I. A. BIGGER, Richmond: As indicated by Dr. Payne, there must be many patients in Virginia with pharyngoesophageal diverticula who for various reasons have not been operated upon. This is unfortunate, for the condition is a serious one. Such diverticula not only produce very disagreeable symptoms but also lead to malnutrition and chronic bronchopulmonary infection. It is desirable, therefore, to operate upon such patients before their general health has been too greatly impaired.

The symptoms are quite characteristic and the final diagnosis may be readily confirmed by a competent roentgenologist. Esophagoscopy is usually unnecessary and should certainly not be attempted by anyone who is not an expert in that field.

Operation may be contraindicated by serious constitutional disease or advanced age. About eighteen months ago we saw an 83 year old lady with a moderate sized diverticulum. We were inclined to advise against operation, because of her age, but she insisted that something be done, so we operated upon her under local and cervical block anesthesia. The sac was freed up and sutured to the cervical fascia in an inverted position. She made a satisfactory recovery and has so far been completely relieved.

This operation should carry much less danger than either the one or two stage excision of the sac and therefore is indicated in patients who are poor surgical risks.

DR. P. P. VINSON, Richmond: In discussing Dr. Payne's paper, Dr. Bigger did not mention a type of operation that he has performed on two of our patients. This operation consists of attaching the fundus of the diverticulum sac to the deep cervical fascia at a level higher than the opening into the pharynx. The sac is not removed but inverted, permitting free drainage and avoiding retention of food. This procedure is associated with very little risk and is indicated particularly in patients of advanced years.

I cannot agree with Dr. Payne that operation for removal of diverticulum is a simple type of surgical procedure. In a large group of cases the mortality rate will probably be about 5-10 per cent, and I believe that the operation that Dr. Bigger has employed is preferable to removal of the sac either by the one- or two-stage operation.

I agree with Dr. Payne about the question of esophagoscopy. Complete investigation of the esophagus should be made by other means before esophagoscopy is employed except in cases of known or suspected foreign body. In a patient who is dehydrated from dysphagia associated with pharyngo-esophageal diverticulum, introduction of a small catheter over a guiding thread into the esophagus provides an easy means for administering fluid and facilitates surgery.

DR. PAYNE, closing the discussion: In closing, I would like to say a word concerning efforts at instrumentation in these cases, as suggested by the two gentlemen who were kind enough to discuss my paper.

I have gone into the details of instrumentation in my manuscript, and have condemned any efforts along this line because of the danger of rupture of the esophagus. Rupture of the esophagus is a very serious catastrophe, and calls for immediate operation to repair the injury and prevent spread of infection downward. Many men emphasize in their operative technique the necessity of introducing an esophagoscope into the sac in order to help the surgeon locate the sac in his operative procedure. This seems to me to be absolutely superfluous. It hardly seems necessary for me to enlarge on that statement. Any man who knows his anatomy and has operated upon two or three of these cases can always find the sac very readily. I am sorry Dr. Bigger in his discussion did not enlarge on his two cases in which he elevated the sac at the first operation and then did not

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think it necessary to later carry out the second stage of removal of the sac. I don't know but what that is a debatable question, because there are many cases in the literature in which ulceration of the sac has been reported and in a few cases malignancy has occurred. It is conceivable, if ulceration or malignancy does not occur in the sac, that atrophy would occur when it is elevated in the neck sufficiently to prevent filling during deglutition.

I realize full well that in these cases Dr. Bigger exercised good surgical judgment, and under certain circumstances the omission of the second stage for removal of the sac might have been exactly the right procedure.

THE TREATMENT OF SCIATICA.*

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Associate Professor of Orthopaedic Surgery, Medical College of Virginia,
Richmond, Virginia.

Sciatica, as the word is commonly used, is a misnomer. But "low back pain with sciatic radiation" is, I believe, a true clinical entity. In this paper, this is what is meant by sciatica.

Even with this definition, the cases considered as sciatica do not have true sciatic pain. It will be remembered that the posterior tibial nerve is one of the two main divisions of the sciatic nerve. Yet, it is rare in sciatica that pain ever occurs along its distribution. The typical sciatic pain, in its severe manifestation, is in the buttock, the antero- and postero-lateral surface of the thigh, the antero-lateral aspect of the leg and the dorsum of the foot. Occasionally pain or anesthesia is complained of in the sole of the foot. Often the most severe pain is in the popliteal space and at the great sciatic notch. In two very severe cases that I recall, there was agonizing pain at times in the adductor region of the thigh. A few sufferers had as their chief complaint cramp-like pains in the calf.

Badgley,[1] in reviewing 447 cases of low back pain with sciatic radiation, states that "there is a characteristic pathway for this radiation arising from the region of the posterior spines of the ilium, over the buttock and trochanter, down the postero-lateral and antero-lateral surface of the thigh, the antero-lateral aspect of the leg and the foot. . . . This distribution of pain is not the distribution of the sciatic nerve. The buttock and upper thigh receive little enervation from the sciatic nerve, so it would be difficult to explain the radiation in that region on a sciatic basis. The posterior tibial nerve, a large component of the sciatic nerve, is never involved in our cases in this radiation of pain.

"On the other hand, the area of involvement is the so-called dorsal axial surface of the leg which is supplied by the postaxial nerves of the anterior divisions which compose the lumbo-sacral plexus."

Our cases of sciatica substantiate his conclusions —that the radiation of pain is not sciatic in nature, "but is typically a radiation of pain over the pathway of the postaxial distribution of the lumbo-sacral plexus, and could more properly be called postaxial plexalgia". But sciatica is the commonly accepted name for this type of pain.

Sciatica, as is well known, may be due to numerous causes. Arthritis or other disease of the lumbar spine or sacro-iliac joint is commonly accompanied by radiating pain in thigh and leg. One of the most severe and completely intractable cases of sciatica the writer remembers was in an elderly lady in whom we could find no cause other than a most marked arterio-sclerosis of the aorta, iliac and femoral arteries, as shown in X-rays of the abdominal cavity and pelvis. Nothing gave her relief from her sciatica except death from cardio-vascular disease.

It is not this type of sciatica with which this paper deals. In those cases with bony changes in the spine or sacro-iliac region, immobilization of the involved joints, following a period of rest in bed and general constitutional treatment, usually gives relief from the sciatica.

The cases which have most worried us and about which this study was made are those which show no bony pathology by X-ray and no definite cause, such as a short leg on one side, for the pain. Clarkson and Barker[2] recently have reported anomalies of the lumbo-sacral area as being responsible for low back pain with radiation. Hodges and Peck[3] report that a narrow lumbo-sacral joint space is more common (ratio 4.5:1) in patients with low back pain radiat-

*Read before the Richmond Academy of Medicine, October 24, 1939.

ing along the sciatic nerve than in patients without this complex, and that developmental anomalies of the lumbo-sacral spine are likewise more common (in the proportion of 2:1). They find that osteo-arthritis is no more common in this type of patient than in a control group without the feature of radiating sciatic pain. We have been inclined to minimize the importance of lumbo-sacral anomalies as in our experience these are found almost as frequently in patients without backache as in those with it. In fact, a study of our cases shows that in by far the majority of them roentgenograms show normal spines and sacro-iliac joints. Though X-rays should be taken, one expects these to be negative in most instances.

Fig. 1.—Positive straight-leg-raising sign.

On examination, a constant finding is the pain, often, but far from always, relieved by lying down. There is usually, but not always limitation of motion in the lumbar spine. In about 40 per cent of the cases a list of the trunk is shown, the list being away from the affected leg most frequently, but sometimes toward the painful side. Often this list is accompanied by a spasm of the erector spinae group of muscles. In a muscular individual, this spasm may be very marked. Even without a true list, the body weight is often shifted off the painful leg.

Straight leg raising (Figure 1) is usually limited, some times on both sides, but generally more on the the painful side. Lasegue's or Kernig's sign (that is, with the patient lying on his back and the thigh flexed to 90° on the pelvis, the leg cannot be extended on the thigh, Figure 2) is usually positive and painful. Hyperextension of the thigh with the patient prone and the knee flexed, Nachlas' sign, frequently produces pain in the lumbo-sacral area. Ober's sign, due to a spasm or contraction of the fascia lata, is sometimes present. This test consists in attempting to adduct the abducted, extended thigh

Fig. 2.—Positive Kernig sign.

with knee at right angles, the patient lying on his opposite side. The test is positive if the knee cannot be brought toward the table, but remains in an abducted position (Figure 3). If present, it is an important indication for treatment.

Sensory changes are infrequently found, but a neurological examination should always be made. Areas of hypesthesia and of anesthesia are occasionally found. Motor changes are very rare.

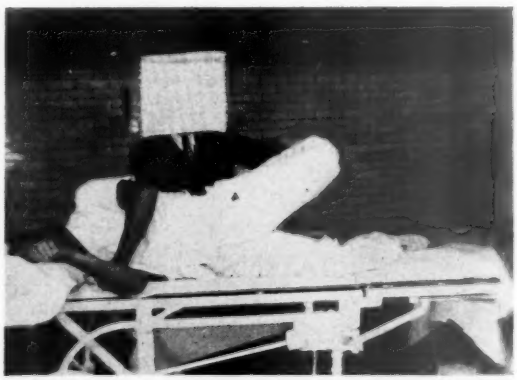

Fig. 3.—Ober's sign positive.

Loss or diminution of the Achilles' reflex on the affected side is an occasional finding and is suggestive of a herniated nucleus pulposus.

Atrophy of the affected leg is sometimes found, especially in the chronic and recurrent cases.

Pain, then, is the constant finding, the cause of the

disability, which may be complete, and, of course, the symptom from which the patient seeks relief. Relief of the pain, therefore, as quickly as possible and as permanently as possible, is the test of successful treatment. As one is rarely certain as to the cause of the pain, it is necessary to try various measures for its relief, usually starting with the simplest treatment and going on to more radical measures if the simple ones do not suffice.

The first step is a thorough history and physical examination, including a neurological and roentgen ray examination. In the cases under consideration in this paper, the neurological and X-ray examinations have eliminated spinal cord tumors and bone pathology. If a focus of infection is found, it should be cleaned up. While we cannot follow Rosenow in the specificity of a streptococcus in a tooth infection for sciatic pain, infection about teeth should be cared for. An occasional case of sciatica clears up after the proper treatment of abscessed or dead teeth.

In a large number of cases of low back pain with radiating leg pain, we have obtained relief by mechanical support for the back. If the pain is severe, the lower back is strapped with wide strips of adhesive plaster, the support being carried around the abdomen also, and the patient is kept in bed on a hard mattress. Traction to the painful leg is often helpful. After a varying period of recumbency, which averages ten days to two weeks, the patient is allowed to get up and the strapping is continued. It should be changed every week, in order to keep it tight, and before each application the skin is painted with tincture of benzoin. After three or four weeks, the strapping is replaced in men by a canvas sacro-iliac binder, and in women by a snugly fitted and reinforced corset. Occasionally we use a back brace or plaster jacket. In more than half of the cases studied, this supportive treatment to the low back has given relief. After the pain is relieved, exercises are given for postural improvement and for strengthening the back and abdominal muscles. A number of these cases have recurrent attacks, but many of them get permanent relief after wearing the support for six to twelve months. Such a case was:

Miss E. M. H., aged twenty-nine, who had had low back pain with right sciatica for fourteen months. After being confined to bed for several weeks, the attacks recurred about every six weeks, confining her to bed for ten days to two weeks. In spite of osteopathic and medical treatments there had been no improvement. There was no history of injury. On examination, the back showed marked lumbar lordosis with a list to the left. All motion in lower back was limited. Left straight leg raising caused pain and there were positive Kernig and Ober signs on the right. The feet were flat. Neurological and X-ray findings were negative.

After a period of strapping, a stout corset with a webbing strap about the iliac crests was fitted, together with arch supports. Although she returned to her work, there was a rather severe recurrence in four months, necessitating bed for two weeks. After this, improvement was steady. Exercises were begun. Fourteen months after beginning of treatment she was completely well and there has been no recurrence in one year.

It is apparent that certain of these cases need manipulative surgery. Too often we hear the story that Mr. X has been to the osteopath or to the chiropractor and after a few treatments the pain has been completely relieved. In a few cases we have used Baer's method of flexing the lower extremity with the knee straight until the foot can be brought down to the face. As will be seen, this has always been done in conjunction with another procedure. The writer does not like this maneuver and questions whether its use in our hands has been necessary. Jostes,[4] in this country, has had much success in regular manipulative methods directed toward stretching of the muscles about the lower back and pelvis and toward mobilization of the lumbo-sacral and sacro-iliac joints. Bankart, of England, has long advocated a similar treatment. We feel that this method deserves a trial which we have not given it.

In two cases, we have used Haggart's method of perineural injection of novocaine with marked success. It is preferred to injection into the epidural space by way of the sacro-coccygeal foramen, which we feel relieves the pain only in rare instances. Haggart reports its use in seventy-five cases, where either the etiology of the pain was unknown or it was employed for the immediate relief of pain while a clinical study was being made to determine the cause.

"The objective of the procedure is to reach the perineural area of the sciatic nerve as it emerges from the pelvis through the greater sciatic foramen, as well as to inject the adjacent fascia and substance of the pyriformis muscle." (Figure 4). With the patient lying on his face, the point of injection is determined by the intersection of two lines. The

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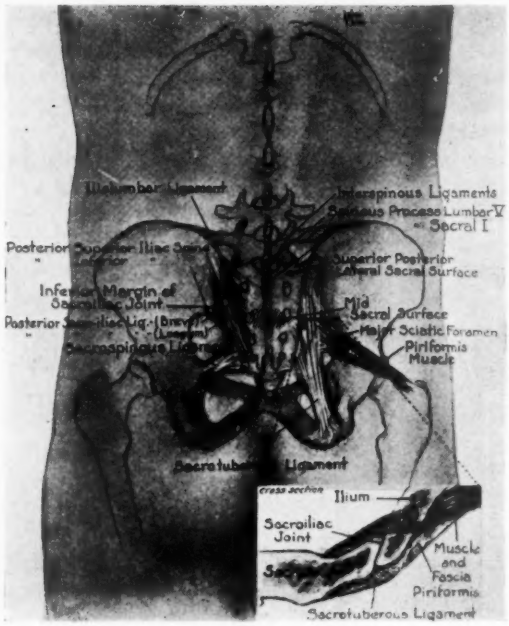

Fig. 4.

first line is projected directly laterally at the level of the apex of the intergluteal fold, for three inches in the male and for three and one-half inches in the female. The other line is a perpendicular erected from the ischial tuberosity. The point of intersection is marked (Figure 5). A twenty-gauge needle, *6 inches long*, attached to a syringe, is inserted through a novocaine wheal at this spot, and pushed gradually inward and forward, at an angle of 45° with the

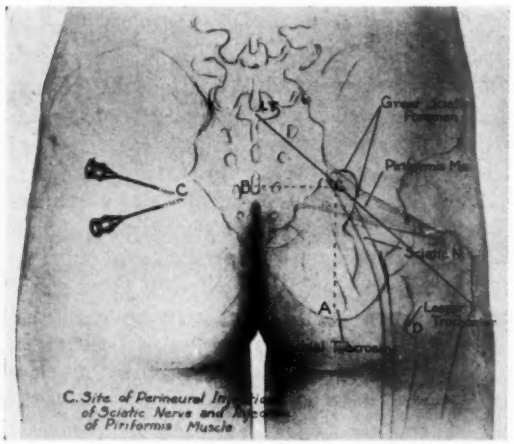

Fig. 5.

skin surface. Usually this can be done painlessly until the dense gluteal fascia is reached, when more novocaine is injected. If the needle is in the correct position, as it progresses inward, the patient will complain of a transitory, lightning-like pain, radiating down the extremity. The needle is then withdrawn about 0.5 cm. With this needle as the center of a small circle, two other needles are passed similarly inward and forward until the fascia and substance of the pyriformis muscle are encountered, which may be recognized by more resistance than is offered by the gluteal muscle through which the needle passes first. Through the first needle, 50 cc. of 1 per cent novocaine, containing two drops of 1/1000 adrenalin to the ounce, is slowly injected. A total of 100 cc. additional is injected through the two other needles.

In one of our cases, in which arthritis of the lumbar spine was the cause of the radiating pain, immediate relief of the violent sciatica was obtained while waiting for a back brace. The other patient obtained slower relief and was treated also with a sacro-iliac binder. It is interesting to note that he also had a positive Ober sign and diminution of the Achilles' reflex, but has had no recurrence in ten months.

It is necessary that the needles be six inches long, for the sciatic nerve at this point is so deep that a shorter needle usually will not reach it. Why the injection of novocaine about the sciatic nerve should relieve the pain which, we have emphasized, is not strictly sciatic is a question which will be answered only when we learn more about the radiation of pain. We expect to use this method more in the future.

In those cases which show a positive Ober[7] sign, we feel sure of the proper procedure for relief. The tight, often thickened fascia lata, which prevents adduction of the abducted, extended thigh, with the knee flexed, should be divided. In this operation, first reported in 1935, an incision is made beginning one inch lateral to the anterior superior spine of the ilium and extending outward and backward to about one inch above the greater trochanter of the femur. Dissection is carried down through the fat to the fascia lata. This is divided well back on the gluteus maximus and well forward to just distal to the anterior superior spine. The cut fascia usually separates for an inch or more. Often it is found to be indurated and quite thickened. It is necessary also

to divide the extensions or fasciculi of the fascia lata which run between the muscles. The incision is closed with skin sutures only, unless the adipose tissue is abundant, when a few catgut sutures are used to approximate it. The operation is done easily under infiltration anesthesia with novocaine. The patient is encouraged to walk in five days.

We have had seventeeen cases in which, because of a positive Ober sign, this operation of fasciotomy has been advised. Four of these patients refused it. Two have been relieved without it; one, cited above, by novocaine injection and a sacro-iliac binder, and the other also reported above, a woman, by a supporting corset and postural exercises. The latter case had a recurrence of sciatica after four months, but for thirteen months since has been well without a corset. The other two, when last seen, were still suffering.

There have been thirteen operations done in twelve cases (See Figure 6). One of these patients had a

FIGURE 6

SCIATICA—CASES TREATED BY OBER FASCIOTOMY

Total Operations (in 12 pts.)	13
Cured	11
Unimproved	2
Percentage of Cures	84.6%
Average time for relief	4 weeks
Longest time for relief	16 weeks
Immediately relief in	4 cases

right sciatica cured by the operation. Two years later a left sciatica occurred, with no pain in the opposite limb. It, also, was cured by the operation on that side, and for two years there has been no recurrence in either leg. This was one of the most severe cases we have ever seen. In these thirteen operations there have been eleven complete cures, a percentage of 84.6 per cent. In three cases, fasciotomy was accompanied by Baer's stretching maneuver. As will be seen by the chart, the time after operation for complete relief to be obtained has averaged four weeks. This average period is lengthened because of two patients who obtained complete relief only after twelve and sixteen weeks respectively. In both of these, however, there was sufficient relief within the first week after operation to stop the use of opiates which had been necessary for many weeks before. Five of these cases obtained complete relief within a week or ten days following operation. A brief case report is typical of these:

Miss S., aged sixty-seven, had been very active until fourteen months ago when she had a violent attack of low back pain with right sciatica. This did not respond to rest or medical treatment and she had been incapacitated since. X-rays of the lower back and extremity were negative except for a needle in the affected thigh eight inches above the knee. This was removed elsewhere but was found to be nowhere near the sciatic nerve and no improvement resulted. The pain extended from the right sacro-iliac area to the calf and was so severe that she spent most of her time in bed, which gave some relief. Sitting was particularly painful. Physical examination showed a left lumbar scoliosis, no limitation of motion in the back, but pain referred to the right gluteal region on all back motions. Straight leg raising, Kernig and Ober signs were positive on the right side. There was tenderness in the right buttock and back of the right thigh. Both Achilles' reflexes were absent. The left breast had been removed several years previously for a benign tumor. The neurological examination, including spinal fluid tests, was otherwise negative, as was the pelvic examination.

The right fascia lata was divided, as described, under local anesthesia. Before the skin was sutured, there was relief from the calf pain, which had been severe. She walked on the fifth day and had no pain or discomfort after the seventh day. No opiates were necessary after the second day. Fifteen days postoperative she came to the office, walking without her cane, and she has worked a full year without any pain.

Of the two failures, Mrs. J. C. L., aged forty-four, had suffered with very severe right-sided back pain and sciatica for eight months. Ten years previously she had suffered a fracture of the fifth and sixth cervical vertebrae. At her first visit, she was seized with such a severe spasm of pain that she shrieked and fell down. She was taking codeine, and occasionally morphine, daily. Baer's stretching had been done elsewhere, but she had not permitted the use of a plaster spica afterwards. She had had several osteopathic treatments with no relief, and it was the osteopath who referred her to me. On examination, all motion of the lower back was limited; the weight was borne on the left leg. Straight leg raising, Kernig, and Ober signs were all positive. Neurological examination showed hypesthesia to pin prick over the lateral aspect of the right leg and over heel and sole of the right foot. There was no motor involvement and the knee and ankle jerks were pres-

ent and equal on the two sides. X-rays showed slight osteo-arthritic changes in the lumbar spine. Although the probability of a ruptured nucleus pulposus between L4 and L5 or L5 and S1 was suggested, she refused a lumbar puncture and a fasciotomy was performed. Absolutely no relief was obtained. A few days later, a perineural injection of novocaine was performed with transient relief. Three months after the fasciotomy, she was operated on for a ruptured appendix, so that no lumbar puncture has been possible.

The second failure after a fasciotomy may still prove a success. It has been eight weeks since the operation and the pain is still present, but there are now negative straight leg, Kernig and Ober signs. It is our feeling that, with the disappearance of these signs, the pain should probably gradually lessen.

In these cases treated by fasciotomy there were four which gave a history of a previous injury to the back. Three were relieved by the operation and one was not. This is of interest, as such an injury may cause rupture of a nucleus pulposus.

In those cases of low back pain radiating to the lower extremity which are not relieved by any of the above procedures or in which absence of the Achilles' reflex and hypesthesia or other slight neurological changes are found, the persistent pain should suggest the presence of a protruding intervertebral disk or herniated nucleus pulposus pressing on a nerve root. In these cases the spinal fluid often shows a high protein content, though the protein may be within normal limits. In order to confirm the diagnosis and also to localize the lesion, X-ray examination of the spine after intraspinal injection of lipiodol is usually necessary. If intraspinal protrusion of a ruptured nucleus pulposus is found at operation, removal of the tumor-like mass should certainly give complete relief.

In the past four years, an increasingly impressive number of such operations with relief of sciatica has been reported by neurological surgeons. We have done none of these operations, as we feel that the operation rightly belongs to the field of neurological surgery. Strange to say, although this condition is constantly in mind when we see a patient with unexplained sciatica, we have seen only a few cases which suggested the presence of a protruding disk. One of these is the case reported above where Ober's fasciotomy gave no relief. Certainly one would expect more patients with this lesion in the number of cases of sciatica we have reviewed. Perhaps some of those thought to be relieved by mechanical means have had recurrences and have not returned to us, but have had laminectomies elsewhere with permanent relief. This operation must be considered a valuable addition to the methods of treatment of sciatica.

From this study we feel that the treatment of unexplained low back pain with radiation to the lower limb, or sciatica, should be carried out as follows:

1. Removal of foci of infection, rest in bed, and mechanical support for the lower back. Many of the cases will obtain relief with such conservative treatment.

2. Manipulative treatment should be given more frequently than it is.

3. Perineural injection of novocaine at the level of the greater sciatic foramen should be used for relief of the severe pain while we are waiting for an accurate diagnosis of the cause of the sciatica or while a mechanical appliance for the back is being made.

4. In those patients who have a positive Ober sign, resection of the fascia lata should be done.

5. If there are neurological signs, or if none of the methods of treatment enumerated above give relief, the proper steps for the diagnosis of protruding intervertebral disk should be taken and, if the diagnosis is confirmed, the protruding mass should be removed by operation.

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Medical Arts Building.

EXPERIENCE WITH THYROID DISEASE IN WESTERN VIRGINIA.*

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Thyroid disease has been prevalent in the western portion of Virginia throughout the memory of the oldest inhabitants. Many women and some men with large thyroids have always been noted on the streets of the Valley cities and in public places generally, particularly in gatherings of people from the rural districts. In fact this region has always been considered a part of an endemic goitre area extending throughout the length of the Appalachian ranges from western New York to northern Georgia. During the past decade there has been a marked drop in the incidence of thyroid disease in this section. Persons with goitres are no longer so commonly seen on the streets and in public places. The reasons for this are several. In the first place, the old group of goitres has been more or less obliterated by thyroid surgery, death, or removal; but most interesting in this connection is the fact that the younger generation coming on is not nearly so prone to thyroid disease as their forbears. This is accounted for by prophylaxis —intentional or accidental. There have been no campaigns among school children with the routine administration of sodium iodide or other forms of iodine such as were held in Akron, Ohio, some years ago. The effect of iodized salt is problematical. It is a fact, however, that large quantities of this commodity have been sold and are still being sold in the food stores of Staunton and Augusta County. There is no dispute, however, about the fact that a better race, physically, of young people is being raised up than was formerly the case. Cod-liver oil and orange juice give the babies an enormous boost during their first years and systematic physical examinations among the younger school children with resultant tonsillectomies, dental work, circumcisions and feeding of undernourished children have carried on the work. Then, too, refrigeration and rapid transport have made possible the quick distribution of food so that sea food and fresh vegetables are now obtainable cheaply and easily in the inland areas throughout the course of the year. This has resulted in a very much better balanced diet and a very much better iodized diet for the whole population of this endemic goitre area. The result is that the rising generation is very much more goitre resistant than were their ancestors.

This report concerns a series of about four hundred thyroidectomies performed by the writer in the period between 1921 and 1939. A smaller series of cases were operated on prior to this time; but because in the early years hemithyroidectomy was done instead of the subtotal operation now performed, and because iodine was not generally used in these cases before and after operation, and also because the benefit of metabolic rate determination was not then available, the early cases are not included in this study. There were no fatalities among these earlier cases but results were not so good as later and some of them had to be re-operated on after 1922.

TYPES: Practically all the cases that we have operated on have been toxic. The toxicity has varied, being very mild in some cases and in others extremely malignant in type. We have had quite a large group of cases with metabolic rates under twenty, but with definite hyperthyroid symptoms in which excellent results have been obtained. The large proportion of our cases have been of the nodular type. As well as can be figured out, nodular goitres have occurred in nearly 80 per cent of the series. Roughly, slightly over 20 per cent have been of the diffuse variety. The determination as to whether or not a case falls under the heading of toxic nodular goitre or Graves' disease is largely academic. The symptoms are the same except for the eye signs, and the treatment is the same. In our experience also the pre-operative administration of iodine is equally valuable in the nodular and in the exophthalmic type. Also, there is a group of cases in which the pathology is mixed—toxic adenomas being interspersed with diffuse hyperplasia of the gland. Pathological reports on tissue removed have proved often much at variance with the known clinical symptoms. This, of course, is due to the administration of iodine prior to operation, changing the picture which the pathologist sees. There have been only two cases of carcinoma in our series, one early, the other far advanced. There has been one case of tuberculosis and one case of Riedel's struma or chronic thyroiditis.

*Read before the seventieth annual meeting of the Medical Society of Virginia in Richmond, October 3-5, 1939.

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The large percentage of cases operated on have been between thirty and fifty years of age. The incidence of females to males has been 87 per cent to 13 per cent.

DIAGNOSIS: The diagnosis in these cases is usually easily made. There is perhaps no group of surgical cases in which a diagnosis can be made at first glance so readily as in thyroid disease. The patients usually know what their trouble is before consulting a surgeon, and they come in not for diagnosis but for treatment. Of course there are borderline cases in which diagnosis is difficult but, in the experience of the writer, those cases which after careful study are still not known to be suffering from hyperthyroidism do not yield brilliant results by operation. In other words, unless a case is definitely known to be a case of hyperthyroidism, one is apt to fail to obtain a cure by thyroidectomy.

PRE-OPERATIVE TREATMENT: Treatment before operation may roughly be considered as applied to two groups: first, cases of hyperthyroidism in which there is no permanent heart damage; and second, cases in which the heart is definitely and permanently impaired. In the first group, the treatment is comparatively simple, consisting in the main of rest and the administration of iodine. The period of time in which the patient should be rested before operation varies of course with the severity of the symptoms. In our experience, from one to four days in bed in the hospital is sufficient in most cases. Of course, sometimes longer periods of rest are vitally necessary. Two of our cases have been kept in the hospital for more than three months prior to operation. Most of this time was spent in bed, but it is advisable not to keep these patients flat all of the time. Iodine is administered usually for a period of two weeks before operation in the form of Lugol's solution. A good many cases on which we have operated have come to us after having had iodine at home for long periods of time. One patient who was operated on recently had been taking iodine for eighteen months prior to our seeing her. This evil of long and continuous administration of iodine seems to be hard to stamp out. It is due frequently to ignorance on the part of the patient but very often to either ignorance or carelessness on the part of the family physician. Cases which are severely toxic and emaciated are given carbohydrate feedings prior to operations, and the administration of glucose intravenously is very helpful in the very sick group. Cases with severe heart damage of course require additional treatment, digitalis often and a more prolonged rest.

ANESTHESIA: All our cases have been operated on under general anesthesia. Nitrous oxide and ether have been used almost entirely. In some cases, drop ether without nitrous oxide has been employed. During the past five years in a number of severely toxic cases avertin has been used with much success. As a matter of fact some of these cases in the opinion of the writer could not have been successfully operated on without avertin. With this form of anesthetic, pre-operative fear is practically eliminated. A test dose of avertin has been given in some cases several days before the operation, the patient being put to sleep in bed and carefully watched. If no untoward effects are noted, and none have been, the operative dose is administered without the patient knowing that the operation is to be performed. All of our anesthetics are given by physicians and in the cases that are quite ill the anesthetist is given an opportunity to study the patient throughout a period of several days before the operation.

OPERATION: Anyone who does thyroid surgery develops a technique which seems suitable to him and no part of which is necessarily original. Only a few points of operative technique which have seemed very important to the writer will be discussed. Incision: Care is taken not to make an incision that is too short. In the location of a thyroid incision a very short scar is very much more noticeable than one which extends out on either side, simulating one of the natural creases in the neck. Care is taken not to hook up the ends of the incision, thus avoiding an ugly U-shaped scar. The incisions are made exactly parallel to the clavicles and low enough to enable the patient to cover the scar with a string of beads. Silk stitches are used in the skin and removed very early, on the third or fourth day. The ribbon muscles are always cut but, before the cutting of the ribbon muscles, a step in thyroidectomy which seems to the writer to be perhaps the most important of all steps in the operation is taken. A midline split between the ribbon muscles is made and then, by finger dissection before the muscles are cut, the gland is completely separated from the overlying muscles. Then when the muscles are cut, the whole gland lies before one—bare, visible, and ready for removal. Retractors are necessary only while the superior poles are being clamped, cut and tied. Double tenaculum hooks, two at a time, are used as tractors while the lobes are

being removed. These hooks are held in the left hand of the operator and by means of them alternate traction and relaxation are easily obtainable, thus allowing one to place clamps with great accuracy. All hemostatic clamps are placed by the operator himself. A simplified operating team has been used, only three persons being scrubbed—the operator, assistant, and one nurse. The average time of our operation is between forty-five minutes and one hour. All cases are drained.

POST-OPERATIVE TREATMENT: This is usually simple. Morphine is used generously for several days with the patient kept as comfortable as possible. We have had very little post-operative nausea. Iodine is administered for several days, usually being given with Murphy drip. It is not used except in the severely toxic cases. Fluids are given freely and in most respects the post-operative treatment corresponds to the treatment given in other classes of cases. Our patients are kept in bed always for one week. It has never seemed advisable to the writer to let these cases sit up any earlier. They usually return home before the tenth day.

RESULTS: There have been five deaths in this series. Two of these deaths occurred in thyroid crises—one on the third post-operative day and one on the fifth. They were desperately ill—one a young man, the other a young woman. These cases occurred in 1926 and it is believed that they could possibly be saved now with more and better knowledge of post-operative treatment and with avertin anesthesia. There were two deaths on the operating table, neither of which apparently should have died. One was a middle aged woman, the other a woman of twenty-eight. Both deaths occurred near the end of the operation and both patients died suddenly, apparently of respiratory failure. These cases occurred during the same week, immediately after the installation of a new anesthesia machine in the hospital. The machine was tested in every way, as were the gases, and no fault could be found in either. The anesthetics were given by experienced anesthetists and each case had a different anesthetist. The fifth case died during an attempt to arrest a post-operative hemorrhage immediately following operation after the patient had been returned to bed. While clamps were being placed on the bleeding veins, the patient's pupil on one side suddenly dilated and the patient expired. There have been only two post-operative hemorrhages in this series, the one described above and one other which had to be returned to the operating room and the wound re-opened. The second case recovered without interruption. There has been one case in which the recurrent laryngeal nerve has been permanently damaged. This woman had a whispering voice for two years following operation, after which time she moved from this locality and has not been seen. There have been two other cases which had slight whispers for about two months, but the voice finally recovered its full volume in each case. In the main it is thought that the results in this series have been good. These patients have all come in from a rather limited radius and have been easily followed up. If things have not gone just right, the patients have been more than apt to return to find out the reason why. It is thought that thyroidectomy is a safe and satisfactory procedure in cases in which it is indicated and it is felt that one may undertake the operation with as much assurance of success as one feels in doing supra-vaginal hysterectomies for fibroids or cholecystectomies in gall-bladder disease.

DISCUSSION

DR. G. F. SIMPSON, Purcellville: I am very much interested in Dr. Bell's paper on thyroid disease and his frank report of his observations. Having practiced medicine in the mountains of Virginia, however, for a number of years, I want to recall an experience and ask Dr. Bell to differ with me a little.

Like Dr. Bell, I, years ago, noticed people with enlarged thyroids in my practice and at the fairs and in other gatherings, as I think we all naturally do. When we see patients suffering with some particular condition, then we follow it up. We do that involuntarily and unconsciously. I have had numbers of cases of thyroid disease. Right recently, riding around the county and observing, I noted that the native Virginians that we had at that time are not here. If there is a home here, or a family here, the children are somewhere else; and I think if we look and investigate into this we shall find out that the reason thyroidism is not so prevalent is because they are not remaining in the same altitude and under the same conditions, and probably that has more to do with it than the fact that they have been given iodized salt. Of course, we do know that the general men do treat those cases as they see them and watch the children and give them iodized salt to improve their condition. But I believe that is something that we are emphasizing too much today and that we are not emphasizing enough the actual ground conditions that prevail.

DR. BELL, closing the discussion: I do not know exactly what Dr. Simpson means by the statement that the native Americans are not there. We have not lost many of them up in my community. The children of families that I know are thyroid families are not having the former

proportion of enlarged thyroids nowadays. We have not had any organized administration of iodized salt, but these people get it themselves. They read the advertisements in the newspapers and go in and ask the grocer for it. If it affected their palates as it does mine, they would not have it. Of course, the amount of iodin in this salt is very small. I do not know how much good iodized salt has done. I think the general improvement of the race has done more than anything else to diminish the incidence of goiter.

ENDOCRINOLOGY BRIEFS.

The Ovaries.

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HISTORY

In 1543 Vesalius pictured the ovary as closely resembling the testis and connected to the uterus by a vas. Fallopius in 1561 described the other parts of the generative tract. In 1672 de Graff described the vesicles in the ovary which bear his name and he identified the corpus luteum. Not until 1827 was the human ovum discovered by Baer. In 1913 Meyer and Ruge correlated the changes in the ovum with cyclic changes of the endometrium. In 1928 Aschheim and Zondek reported the presence of a gonadotropic factor in the urine of pregnant women and revealed its use as a laboratory test for pregnancy. In 1929 Sevringhaus and Evans published the first account of dependable use of estrogenic substances in the treatment of menopausal symptoms. In 1938 Dodds of England developed stilbestrol, a new synthetic estrogenic drug, for use particularly in the control of menopausal symptoms. Since the beginning of the twentieth century we have really begun to understand the ovary and its many functions and disturbances.

PHYSIOLOGY

As noted in previous papers, like the testes, the ovaries are guided in their growth and function by the two gonadotropic hormones of the anterior pituitary gland, the follicle stimulating hormone (Prolan A) and the luteinizing hormone (Prolan B). The proper physiological coordination of these two hormones determines the primary growth of the ovary and influences the cyclic character of its function. Gonadotropic hormones from other sources have only part of the action of true pituitary hormones. For example, antuitrin S or A.P.L. represents the hormone from pregnancy urine which is ambiguously named anterior pituitary-like hormone because, while it does have a luteinizing effect, it lacks the follicle stimulating effect of the true anterior pituitary gonadotropic hormone. Pregnant mares' serum is an exception in that apparently its hormone has both follicle stimulating and luteinizing effects. There are some minor technical differences from the true pituitary hormone but these have not been reported as of any clinical significance. The gonadotropic hormone is also found in the placenta, urine of women with hydatid mole or chorioepithelioma, postmenopausal or castrate urine, and amniotic fluid. The hormones from these sources are similar but not identical in their function.

Now the follicle itself produces a hormone called an estrogenic substance, specifically, estradiol or dihydrotheelin. This hormone incites the following physiological responses:

1. The development of the secondary sex characteristics which differentiate the mature woman from the child or the castrate, such as hair distribution, bodily contour, libido, etc.
2. Development of the mammary duct system.
3. Development of the adult vaginal mucosa.
4. Growth of the myometrium and sustaining of its rhythmic contraction.
5. Development of the endometrium through the proliferative stage and to the secretion stage of about the end of the second week in the normal menstrual cycle.

The follicular hormone is found in the follicle, its fluid, the placenta, and in pregnancy urine and blood, and in amniotic fluid. It has been extracted from the gonads of stallions. There is an abundant supply in urine of stallions and of pregnant mares. The latter is the usual commercial source. Theelin, theelol, pregnandiol, dihydrotheelin are related compounds. The commercial names are even more confusing. More than eighteen separate and distinct names are used for this follicular hormone. This

regrettable state only adds confusion to an already perplexing problem.

The corpus luteum produces a hormone, progesterone, chemically related to the follicular hormone. Progesterone is responsible for the following:

1. Development of the acinar elements of the breasts.

2. Secretory development of the endometrium during the last two weeks of the normal menstrual cycle.

3. A tendency to oppose the activity of the follicular hormone on uterine motility.

Progesterone has been prepared synthetically from stigmasterol derived from soy beans as well as from pregnandiol of pregnant urine. It has been extracted from corpus luteum and the human placenta.

In normal menstruation the follicular or estrogenic hormone, as its production increases from the first to the twelfth day, begins in turn to inhibit the pituitary whose gonadotropic hormone originally stimulated follicle development. Ovulation takes place on about the twelfth to the fourteenth day. Corpus luteum is then formed and its hormone, progesterone, completes the preparation of the endometrium for menstruation. If pregnancy does not take place, the corpus luteum degenerates. Thus, both ovarian hormones, follicular and corpus luteum, reach a very low concentration, the pituitary inhibition is thereby released, and the cycle is once more repeated. If pregnancy does take place, corpus luteum is retained and the pituitary is held in check until term. We realize that this is but one theory of the female reproductive cycle but at present is the most acceptable and clarifies our concept of the disorders of menstruation.

To summarize: The anterior pituitary yields the gonadotropic factor of two hormones, one of which stimulates the follicles which in turn produces the estrogenic hormone, the other of which stimulates the corpus luteum which in turn produces its hormone, progesterone. There is a delicate balance between each of the hormones for normal function. Any disruption of this balance may give rise to symptoms and it is this subject to which we will now direct our attention.

THERAPY

Menstrual disturbances from amenorrhoea, irregularity to sterility and hypogonadism are in most instances due to ovarian insufficiency which in turn is due to lack of pituitary stimulation. We assume that the metabolism is normal and organic disease is excluded. Antuitrin S, A.P.L., etc., anterior pituitary-like hormone, is contraindicated because it actually inhibits follicle development. Estrogenic hormone is likewise contraindicated because it inhibits pituitary stimulation and therefore ovarian activity. True anterior pituitary gonadotropic extracts are on the market. Prephysin (Chappel Laboratory, Rockford, Ill.) and gonadotropic factor (maturity) of Armour, and Ayerst, McKenna and Harrison laboratories are potent products. One cc. daily or every other day for the first two weeks of each menstrual cycle is recommended. This provides maximum pituitary stimulation to the date of ovulation and follows the normal sequence of hormone action. Of course, in complete amenorrhoea, regular treatment must be continued until a cycle is established.

Recently for the same purposes there has appeared on the market preparations of pregnant mares' serum. Among these are gonadogen of Upjohn and anteron of Schering. The manufacturers recommend dosage schedule. Sufficient clinical experience is not yet available for evaluation of this preparation but reports have been quite favorable. The cost of each dose for either the pituitary hormone or pregnant mares' serum is in the neighborhood of fifty cents.

Menorrhagia presents one of the most important problems of menstrual disturbances. Its satisfactory treatment is frequently life saving. Of course, organic disease must be ruled out and we assume that there is, as above, no thyroid imbalance. Usually hyperpituitarism is associated with increased menstrual flow and hypopituitarism with diminished menstrual flow. However, actually there is no such constant relationship and the reverse association has been observed. Until the actual cause is determined, empiricism in therapy is necessary. Novak and others since 1931 have reported excellent results with the anterior pituitary-like hormone as antuitrin S and follutein which have a luteinizing effect. Injections of one to two cc. daily for five to ten days are recommended. Now that potent true gonadotropic extracts of anterior pituitary and pregnant mares' serum are available, these have been found useful, particularly in menorrhagia of young women. Bleeding at the menopause strangely enough may be controlled by the estrogenic hormone and when this hormone has been used at a low dosage, an increase actually checks bleeding in many instances. If bleed-

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ing becomes too serious, drug therapy and/or X-ray radiation may be indicated.

The two principal ways in which the estrogenic substances are used are for substitution, and for pituitary inhibition. In gonorrheal vaginitis of children, 1,000 to 2,000 international units a day, for not over a few weeks, by suppository or injection convert the mucosa to the adult type thereby throwing off the infection. This is the clearest example of true substitution therapy. Kaurosis and pruritus of the aged are likewise frequently relieved by larger amounts of estrogenic substance.

Probably the most widely recognized indication for estrogenic therapy is the climacteric or menopause, either natural or surgically induced. Here the ovaries have slowed down in their function or have been removed. When this occurs the pituitary becomes overactive because of the balance between the two. It is apparently this pituitary overactivity which, in addition to ovarian hormone failure, is responsible for the symptoms of the menopause, namely, vertigo, nervousness, palpitation, heart consciousness, hot and cold flushes, crying spells, numbness and tingling of scalp, hands or feet, and cessation or irregularity in time or character of menses. It must be remembered that the estrogenic hormone depresses the ovary and therefore is contraindicated in patients in whom ovarian function is desired.. That is why its use in dysmenorrhoea and irregularities in young women is definitely contraindicated.

In the vast majority of patients oral administration of 1,000 to 20,000 international units (200 to 4,000 rat units) daily of the estrogenic hormone is sufficient to control symptoms. Per unit the injection is more efficient but, as in other forms of hormone therapy, small amounts at frequent intervals more nearly approach the natural process than large weekly or bi-weekly doses by injection. Another fact worth considering is that the sesame or peanut oil base is never absorbed but remains a foreign body in the muscle. After the dose sufficient to control symptoms has been obtained it may be gradually lowered to the minimum that sustains relief. It will probably be necessary to maintain treatment from six months to three years. Too low a dosage of the hormone is a frequent cause of treatment failure. However, too much of the estrogenic hormone may actually intensify menopausal symptoms. Amniotin, theelin, estrone, estromone, progynon and emmenin are among the reliable standardized products.

The latest addition to our estrogenic armamentarium is stilbestrol which, due to wise policy of the new drug regulation act, has not been placed on the market. Experimental work, however, has shown that this synthetic product simulates in a very potent way all of the estrogenic reactions. One to five milligrams is the average daily dose. Its great advantage is that its cost is about one-tenth of that of the natural hormone preparations. Its disadvantages are such toxic reactions as nausea, vomiting, headache, and lassitude. Large doses in animals have produced liver and bone marrow damage. Much carefully controlled experimentation is necessary before this drug is released for general use.

Progesterone therapy for intramuscular use in oil as progestin, proluton and lipolutin is being used in the treatment of habitual or threatened abortion with increasing success. Its action, though still not clear, may be substitution for an inadequately stimulated corpus luteum. Dysmenorrhoea is frequently dramatically relieved but cost prevents the routine use of progesterone. Aqueous solutions of corpus luteum are now known to contain only variable amounts of estrogenic hormone and no progesterone.

1000 West Grace Street.

EDITOR'S NOTE: **Third in a series of brief summaries of our present knowledge of a rapidly changing field of diagnosis and therapy.**

THE USE OF UNNA'S PASTE IN THE TREATMENT OF VARICOSE ULCER.*

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and
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Although Unna's paste was described about 1880, and has been used to some extent ever since, its value seems never to have been fully appreciated. Its chief use is in the treatment of varicose ulcer of the lower extremity. There is probably very little or no medicinal value in the formula but its chief remedial

*Read before the Virginia, Maryland and District of Columbia Medical Society, November 15, 1939.

properties are due to the constant pressure that can be acquired. It has the advantage of being non-irritating and the zinc oxide powder and glycerin may have some healing effect.

CAUSE OF VARICOSE ULCER

The predisposing cause of varicose ulcers is edema. The edema might be likened to a marshy field which becomes sodden for lack of drainage. When the skin is once broken it is practically impossible to heal the ulcer until the fluid that is static in the capillaries and tissues has been drained away. This can be accomplished usually by one of two ways: either by putting the patient to bed and elevating the affected limb or limbs, or by applying even pressure to support the column of blood in the superficial veins. The first means incapacitating the patient for a considerable length of time, and as varicose veins occur most frequently in the under-privileged class who can ill afford to lay up, it is often impractical. By using Unna's paste bandages the patient can be kept on his feet during the entire treatment. They should be changed as necessary, anywhere from every other day to several weeks. If there is much discharge frequent dressings are necessary, but when the ulcer has healed the dressing can be worn in place of an elastic stocking to which it is much superior.

HOW TO MAKE UNNA'S PASTE

Unna's paste, or "paint", as it was formerly called, was first used by Dr. P. G. Unna, of Hamburg, Germany, in treating diseases of the skin. To whom is due the honor of suggesting it for the treatment of varicose ulcers is not known. Dr. James F. Mitchell has used it for many years and was the one who introduced me to its virtues. The formula is as follows: Take ten parts each of water and glycerin and four parts each of the best sheet gelatin and zinc oxide powder. Put the vessel containing the water in a water bath and slowly melt the gelatin; add glycerin when the former is thoroughly melted, and then the zinc oxide powder, until a homogenous mixture results. The paste will have a disagreeable odor because of the gelatin, and to correct this a few drops of oil of wintergreen are added. In the fluid state the paste looks like paint but when it cools it has the feel and look of white rubber.

APPLICATION

After the limb has been thoroughly cleansed and dried and any scabs removed, the dressing is applied. It has been customary to apply it as a paint, alternating each time with a layer of gauze roll, but this can be simplified as follows: Take a roll of wide mesh gauze bandage and re-roll it so that it can become impregnated with the paste. The bandage should be about two and one-half inches wide. The paste is heated over a hot water bath and the loosely-rolled bandage immersed. After the bandage is thoroughly saturated with the fluid paste it is twisted between two artery clamps to remove the excess. The bandage is then applied from the base of the toes to below the knee, taking care to make the dressing smooth. Several bandages may be applied in this way. Over the paste bandage a dry bandage is placed in the same way to prevent soiling the clothing. The ulcer areas are re-enforced by extra layers of gauze to take care of the discharge.

It is probably safe to say that we have never seen an ulcer on the extremity associated with edema and due to varicose veins that could not be healed by this method. Tuberculous and syphilitic ulcers are not included in this discussion.

For a permanent cure, the saphenous vein and its branches should be ligated just below Poupart's ligament and a retrograde injection of some sclerosing fluid (preferably sodium morrhuate) done at the same time. Any remaining veins in the calf can be cared for by local injection of the same material.

CONTRAINDICATIONS

There is one precaution that should be taken in every case before ligating and sclerosing the superficial veins, and that is to determine that the deep veins are patulous. This can be done by Trendelenburg's test or by applying a snugly-fitting bandage to the leg and noting whether it gives relief or more discomfort. Where the deep veins are occluded the pain as a result of the bandage will be excessive. In the aged and in those suffering from diabetes, arteriosclerosis, thromboangiitis obliterans and allied conditions, great concern should be exercised as to the advisability of using any sclerosing fluid. A careful history and examination should precede treatment in every case, being on the alert especially for a history of thrombophlebitis (milk leg) associated with previous illnesses. A case in question is the following:

Mr. S. E., thirty-seven years old, seen in consultation at Emergency Hospital on April 19, 1938. He complained of pain and swelling of the left leg and a small ulcer just below the calf. He had been in the hospital two years previously, suffering from burns

on the face and body and while he was there developed pneumonia. Following this he had a phlebitis of the left leg. As a sequela he had several ulcers, one over the internal malleolus and one a little higher up.

Examination showed man, thirty-seven years old. Blood pressure, 150/98. T. P. R., 98-100-20. The left leg was swollen and edematous and the superficial veins were markedly prominent. Varicosities extended above Poupart's ligament over the lower part of the abdomen. Trendelenburg test was positive. Leg was bandaged from the base of the toes to below the knee and he was allowed to walk around. The bandage instead of decreasing his pain markedly increased it, and he was obliged to take it off himself. Because of the history and the fact that the pressure bandage did not give relief, but increased the pain, it had to be concluded that the deep circulation was blocked and it would be of no benefit but a definite detriment to obliterate his superficial venous return.

REPORT OF FIFTY-SIX CASES OF VARICOSE VEINS OF THE EXTREMITIES

Of these, twenty-four were males and thirty-two females. The average age was forty-nine. The number of patients having ulcers was sixteen. Two had ulcers on both legs; several had multiple ulcers, all ulcers situated between the calf and lower part of the ankle. The most painful ulcers were beneath or over the internal malleolus. The ulcers varied in si from one-half to three inches in diameter. M cases showed some edema. Pain was variable fr moderate to very severe.

TREATMENT

Skin graft: 1. Unna's paste bandage: 38. Injectio thirty-four, of which fourteen were injected w quinine and urethane and the remainder with sodium morrhuate. Ligation: ten cases, one of which wa bilateral, and two cases in which the ligation wa done in the thigh. In one case a Mayo stripping operation was done, and in one case treatment was not given on account of the inflammation.

RESULTS

Practically all cases but one were improved at the time of discharge. Only in those cases where the saphenous vein and its tributaries were tied proximal to their junctions with femoral veins could the cure be considered permanent.

There were nine known recurrences, or 16.7 per cent, among those treated by local injection or by Unna's paste bandage, or both. There were no cases of ulcer which were not healed by Unna's paste bandage, either alone or in conjunction with local injections of a sclerosing fluid.

2238 Que Street, N. W.

AN ANALYSIS OF CESAREAN SECTION AT UNIVERSITY OF VIRGINIA HOSPITAL.*

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Many publications have appeared in the past few years pointing out the abuses of Cesarean section, so that any clinic in which this method of delivery has popularity should from time to time analyze their cases and determine their results. It has always seemed to us unwise to condemn the procedure because it is unavoidably associated with a definite morbidity and mortality, but rather its value should be determined by the relative outcome in live mothers and babies in contrast to the result in live mothers and babies when vaginal delivery is accomplished in the presence of the conditions for which the abdominal delivery was performed. An analysis should be made with the hope of reducing the incidence and the resulting fatalities in one's own clinic rather than an attempt to compare the results with those of some other clinic.

Special maternity centers and lying-in hospitals with their well organized prenatal clinics and social service departments, and their low incidence of neglected cases, should show a lower incidence of Cesarean section and a lower morbidity and mortality therefrom. The importance of detecting the complications of pregnancy and recognizing by prenatal

*Read at the annual meeting of the South Atlantic Association of Obstetricians and Gynecologists, Charleston, S. C., February 11, 1939.

observations the conditions which will complicate labor is well recognized. The maternity hospitals receive some neglected cases but it is doubtful if the percentage is as large as in general hospitals having active obstetric services. It is worthy of note that 76 per cent of our patients delivered by Cesarean section had no prenatal care.

about the ratio of white patients to colored patients on the entire service. We encounter better cooperation prenatally from the colored than we do from the white ward patients.

Of the 185 cases of Cesarean section, eighty-two were done on primiparous and 103 on multiparous patients. The youngest patient to be operated upon

TABLE I

TYPES OF DELIVERY

Year	Total Deliveries	Spontaneous	Cesarean Section	Versions and Extractions	Breech	Mid Forceps	Low Forceps	Craniotomy
1931	235	153	5	3	17	1	55	1
1932	567	414	13	3	41	3	93	
1933	409	262	30	5	32	5	75	
1934	494	353	28	7	40	4	62	
1935	509	375	30	4	32	3	65	
1936	607	474	26	6	24	3	73	1
1937	667	507	38	6	34	4	78	
1938	382	276	15	3	12	1	75	
TOTAL	3,870	2,814	185	37	232	24	576	2
		72.71%	4.78%	.95%	5.99%	.62%	14.87%	.05%

The following analysis is based on 185 cases of Cesarean section done at the University of Virginia Hospital from July 1, 1931, to July 1, 1938. The University of Virginia Hospital is a general hospital located in a town of approximately 15,000 inhabitants and is the teaching unit for the Medical School. It serves as a hospital center for a widely spread rural and mountainous area.

The decision to treat a given case by Cesarean section was made either by Dr. T. J. Williams, Professor of Obstetrics and Gynecology, or myself, and many times in joint consultation. We have not allowed the social status of a patient to influence us in our decision to do a Cesarean section. The operations were done for the most part by the Resident Obstetrician except for some very poor operative risks and private cases. The anesthesia employed was nitrous oxide, oxygen and ether except in two instances in which spinal anesthesia was used.

The relative incidence of the various operative procedures to the total number of deliveries is shown in Table I. There is an incidence of 72.71 per cent spontaneous deliveries, low forceps 14.87 per cent, breech extractions 5.99 per cent, Cesarean sections 4.78 per cent, versions and extractions .95 per cent and mid forceps .62 per cent.

The 185 cases of Cesarean sections consisted of forty-two private and 143 ward patients. The division according to race and year is shown in Table II.

Approximately 75 per cent of the sections were in white women and 25 per cent in colored which is

was a colored primipara of eleven years who had never menstruated and who had as indications a generally contracted funnel pelvis and severe toxemia. The oldest patient was a white woman forty-five years of age who had had three spontaneous deliveries, one abortion and seven operative deliveries resulting in four stillbirths. After a trial and unsatisfactory labor of twenty-four hours, during which

TABLE II

CESAREAN SECTIONS BY RACE AND YEAR

Year	Total Cesarean Sections	White	Colored
1931	5	3	2
1932	13	10	3
1933	30	21	9
1934	28	19	9
1935	30	22	8
1936	26	23	3
1937	38	29	9
1938	15	12	3
TOTAL	185	139	46

time there was unengagement of the head, a Porro Cesarean section was done.

INDICATIONS

It is found that our indications for abdominal delivery have been lenient. There is but little ground for concern with the absolute indications for Cesarean section as ordinarily set forth, but many of the so-called relative indications might be justly criticized and afford reasonable ground for divergence of opinion. In many cases there was more than one factor which influenced our decision. For purposes of

grouping our indications we have tried to select the most important indication.

TABLE III

INDICATIONS FOR CESAREAN SECTION

1. Contracted Pelvis and Cephalo-Pelvic Disproportion	63 cases	34%
4 Eclamptics		
1 Toxemia without convulsions		
1 Marked varicosities of vulva		
2 Previous Cesarean Section	29 cases	29%
2 Toxemias		
1 Transverse presentation		
1 Tranverse presentation with central placenta previa		
3. Toxemia	26 cases	14%
1 Fibromyomata uteri		
4. Premature Separation of Placenta	16 cases	8%
5. Tumors	10 cases	5%
9 Fibromyomata		
1 Extensive granuloma of cervix		
6. Elderly Primipara	8 cases	4%
1 Frank breech		
1 Toxemia		
7. Malpositions	5 cases	3%
1 Transverse with toxemia		
1 Transverse with two previous still-births		
1 Transverse with three previous still-births		
1 Frank breech with previous nephrectomy		
1 Face with chin posterior, toxemia		
8. Uterine Inertia and Cervical Dystocia	4 cases	2%
1 Extreme obesity		
1 Extensive laceration of cervix		
9 Sterilization	4 cases	2%
10. Placenta Previa	3 cases	
11. Postmaturity and Excessive Size of Child	3 cases	
12. Previous Pelvic Operations	3 cases	
2 Complete vaginal plastic repairs		
1 Suspension with toxemia		
13. Varicosities and Thrombophlebitis	2 cases	
14. Psychoses	3 cases	
15. Heart Disease	2 cases	
16. Tuberculosis with Thoracoplasty	1 case	
17. Impending Uterine Rupture	1 case	
18. Previous Inversion of Uterus	1 case	
19. Torsion of Uterus	1 case	

The largest group for which Cesarean section was done was the group of contracted pelves with instances of cephalo-pelvic disproportion. In only a portion of the cases was the contraction an absolute indication for abdominal delivery, while in the remainder some other relative condition existed which influenced our decision to deliver by abdominal section. This group comprised sixty-three cases or 34 per cent of the entire series. A division of these cases according to race and type of pelvis is shown in Table IV.

TABLE IV

TYPES OF CONTRACTED PELVIS ACCORDING TO RACE

	White	Colored	Total
Simple Flat	9	3	12
Generally Contracted Funnel	12	6	18
Funnel	9	1	10
Generally Contracted	7	5	12
Flat Rachitic		6	6
Unilateral Lameness	1	1	2
Generally Contracted Rachitic		3	3
TOTAL	38	25	63

Four patients with eclampsia and contracted pelvis were delivered by Cesarean section, but in each instance the indication was the cephalo-pelvic disproportion. The earliest operation on an eclamptic was not performed until twenty-four hours after the last convulsion had occurred, while in one instance the section was not done until three days after the last convulsion.

In twenty-nine instances the operation was performed because of a previous Cesarean section, twenty-four of which were done at this Hospital. In general, we believe that if a patient has had a Cesarean section her best interests are served by having subsequent deliveries by the abdominal route. We feel that the hazard to the mother and baby are less with an elective section than with labor, even though the indication for which the previous section was performed is not a permanent one.

In sixteen patients the operation was performed for premature separation of a normally implanted placenta and in three instances for placenta previa. Our attitude in the treatment of these patients is one of individualization of each case, many of them being delivered through the vagina. The type of delivery is chosen dependent upon all of the conditions present, and the method of delivery selected which seems to offer the best combined prognosis for mother and child.

The types of operation by years are shown in Table V.

TABLE V

TYPE OF OPERATION

Year	Classical	Low Cervical	Classical With Hysterectomy
1931	4	0	1
1932	12	0	1
1933	30	0	0
1934	24	0	4
1935	24	4	2
1936	23	2	1
1937	35	1	2
1938	12	1	2
TOTAL	164	8	13

The classical operation was performed in 164 instances, and this high incidence of the classical operation is undoubtedly open to criticism, especially since the five fatal cases have occurred in this group, although we suspect the same fatalities would have occurred regardless of the type of section performed. The high incidence of the classical operation is explained mainly on the basis of a clinical experiment which we are carrying on to convince ourselves by our own experience of the superiority of the low cervical operation. In this connection it is interesting that the twenty-eight cases delivered by classical section were potentially infected at the time operation, although but one of this number proved fatal, the patient dying of an embolus. The Porro operation was performed thirteen times, three for premature separation of the placenta with intramuscular hemorrhage, five for fibromyomata uteri and five for intrauterine infection. There were no mortalities in this group. The low cervical operation was performed eight times, six after trial labor without progress and two before the onset of labor. There were no fatalities in this group.

MORTALITY

In the series of 185 cases there were five maternal deaths, a mortality rate of 2.7 per cent. The five deaths occurred in the group of 164 classical operations, giving a mortality of 3 per cent for the classical operation. The fatal cases are briefly described below.

Case 1. Excitable neurotic patient. Uterine inertia and cervical dystocia. The lower uterine segment was poorly formed and the patient in poor condition on operating table and was taking the anesthetic badly. A low classical section was done. The puerperium was complicated by marked abdominal distention, separation of the abdominal incision necessitating secondary closure, intestinal obstruction requiring enterostomy. A pelvic abscess formed, treated by posterior colpotomy. There was marked improvement and it seemed that all was well until twenty-four hours after the colpotomy the patient died from a pulmonary embolus.

Case 2. Previous Cesarean section, toxemia complicating the present pregnancy. Elective operation. Died from lobar pneumonia eight days after operation.

Case 3. Elective classical section done for placenta previa. The patient died on the operating table from circulatory collapse.

Case 4. Elective classical section done for an extensive bleeding granulomatous lesion of the cervix filling the vaginal vault which was first thought to be carcinoma. Death resulted from peritonitis.

Case 5. Elective classical section done for premature separation of the placenta associated with a severe toxemia of pregnancy. The patient died twelve days postoperative in anuria and uremia. At no time during the postoperative course was there any evidence of infection.

Except for possibly Cases 1 and 4 it is difficult to see how the type of operation could have been much of a factor in the outcome, while the death in Case 2 might not have occurred if local anesthesia had been used.

FETAL MORTALITY

The 185 Cesarean sections resulted in twelve stillbirths. We have included in this group questionable premature children dying soon after birth. The uncorrected fetal mortality was 6.9 per cent. There were six stillbirths in the sixteen cases of premature separation of the placenta. One stillbirth occurred in the patient with tuberculosis who had had a recent thoracoplasty and showed extreme respiratory distress prior to the expected date of confinement and the operation was done prematurely. One stillbirth resulted from the case of face presentation with the chin posterior, with a definite contraction ring. One stillbirth occurred in a patient with severe toxemia of pregnancy, on whom the operation was done prematurely. Two cases of premature stillbirths resulted where sections were done for fibromyomata. Deducting the six stillbirths due to premature separation of the placenta we have a corrected infant mortality of 3.24 per cent.

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MORBIDITY

The abnormal conditions which occurred in the post-operative period are shown in Table VI.

TABLE VI
COMPLICATIONS DURING POSTOPERATIVE PERIOD

Infected abdominal incision	9
Puerperal endometritis	8
One case had infected wound and phlebitis	
Thrombophlebitis	6
Pneumonia	3
Pyelitis	3
Adynamic ileus	2
One case a radical section	
One case a low classical section	
Septicemia	1
Peritonitis	1
Acute suppurative mastitis	1
Psychosis	1
Abscess of lung (eclampsia)	1

SUMMARY

1. A review of 185 cases of Cesarean section has been made, 164 of which were Classical Cesareans, eight were of the Low Cervical type and thirteen were Classical Cesareans with Hysterectomy.

2. In the seven-year period reviewed 4.7 per cent of all deliveries were Cesarean sections.

3. Contracted pelvis and cephalo-pelvic disproportion made up the largest group for which section was done (sixty-three cases or 34 per cent). In many cases several factors were present in the same patient which influenced our decision to effect delivery by the abdominal route.

4. Five maternal deaths occurred, giving a maternal mortality of 2.7 per cent.

5. The uncorrected fetal mortality was 6.9 per cent, while the corrected fetal mortality was 3.4 per cent.

LITHOPEDION WITH CALCIFIED PLACENTA—CASE REPORT.*

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and
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Lithopedions are a rarity in the present era of medicine. Due to this fact and to a feature encountered which to our knowledge has not been reported previously, we are presenting the following case of a full term lithopedion.

A. D., a negress, aged forty-six years, married, was admitted to St. Philip Hospital, Medical College of Virginia Hospital Division, June, 1938, with a diagnosis of fibromyomata uteri. Her present complaint was abdominal pain and low backache for one year, accentuated by exertion. For the past three or four months she has been troubled with frontal headaches and a sensation of heaviness in her pelvis. The menstrual periods were entirely regular until January, 1938. Since then two menses were missed in six months. Her last menstrual period continued for one month and was checked by medication. A profuse foul yellow vaginal discharge has been present for the past seven years.

Family History: There were four children living and well, all born before 1920. Her husband was living and well.

*From the Surgical Service of the Hospital Division of the Medical College of Virginia, Richmond, Va.

Physical examination revealed a very large obese colored female, weighing 275 pounds, who did not appear to be ill. There was a moderate hypertension and a large freely movable nodular tumor which apparently arose in the pelvis. No abdominal tenderness or muscle spasm was elicited. Pelvic examination showed a large cervical polyp and a large nodular mass in the pelvis. It was very freely movable and apparently extended well above the umbilicus on the left.

Laboratory studies were essentially negative. No X-rays were taken before operation.

The diagnosis was leiomyomata uteri and a laparotomy was advised.

On July 5, 1938, under ether anesthesia, the cervical polyp was removed through the vagina and the cervix cauterized. This was followed by a laparotomy, and on opening the peritoneal cavity a large pearl gray tumor was found. It was very firm and calcified and was entirely separate from the uterus, fallopian tubes and ovaries which were normal except for a few small subserous uterine fibroids. The fetus lay with its head beneath the patient's stomach

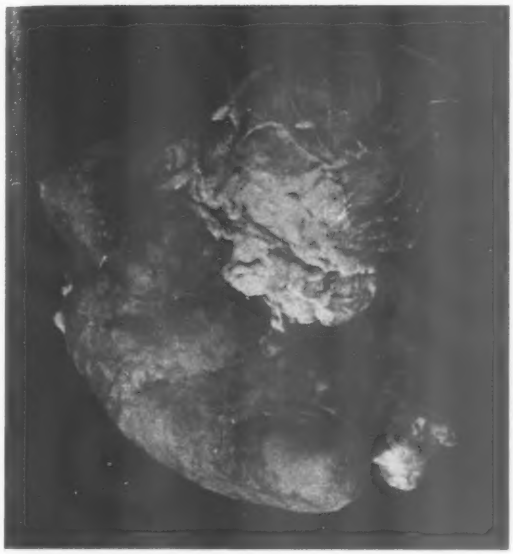

Fig. 1.—Anterior view of fetus.

and its buttocks in the right iliac fossa. Its abdominal surface was to the left. The omentum was loosely attached to the cranial and posterior parts. This was apparently the only source of a very scant blood supply. There was no evidence of an umbilical cord. In the region of the left pelvic brim a small firm calcified mass, 3 cm. by 4 cm., was firmly attached to matted intestinal loops. The calcified full term fetus was easily removed and the abdomen closed. Following the operation the patient made an uneventful recovery.

A few days after operation a more detailed history was obtained, which revealed the following facts: The patient had had five normal deliveries, the last being twenty-one years ago (1917). In 1920 she become pregnant, suffered morning nausea, had lactating breasts, cessation of menses, and was aware of fetal movements. At the end of eleven months a midwife told her she was pregnant. Following this she had severe attacks of abdominal pain at intervals which progressively increased in length. She has not been pregnant since 1920.

The pathological description of the specimen was as follows: The specimen consists of a mass of hard calcified tissue, weight 1,630 grams, with a few attached pieces of fat tissue and this mass has the general form of a fetus which is partially flexed. The right leg and knee can be identified as they leave the trunk and are doubled under it. The head can be definitely identified but the features are obscured by the generalized fibrous and calcified changes. The trunk measures 15 cm. in length and the head measures 11 cm. occipitomental diameter, 6.5 cm. in bi-temporal diameter, and 7 cm. in occipitofrontal diameter. The surface of the fetus is covered by irregular smooth plaques of pearl gray thickened tissue which appears to be fibrous tissue with moderate calcification. The general color is grayish-pink with irregular patches of yellowish-white due to the calcification. No degenerated or necrotic areas can be seen. (The accompanying photographs show two views of this specimen).

From 1582 to 1926 Masson and Simon[1] found 183 cases of lithopedions reported in the literature. Bland, Goldstein and Bolton[2] in 1933 added thirteen cases, and in a brief review of the English literature[3, 4, 5, 6] to the present date we found nine more, a total of 206.

Kuechenmeister in his monograph published in 1881 classified lithopedions into three groups:

1. Lithokelyphos, in which there are calcifications of the fetal membranes.

2. Lithokelyphopedion, in which there are calcifications of both fetus and membranes.

3. Lithopedion, in which there is calcification of

Fig. 2.—X-ray of fetus showing full bony development.

the fetus with or without calcification of the membranes.

The conditions necessary for a fetus to become calcified are:

1. The pregnancy must be extra-uterine.
2. The fetus must survive in the abdomen for more than three months; otherwise, it is absorbed.
3. The condition must escape medical notice.
4. The fetus must remain sterile.
5. The necessary conditions for the deposition of calcium must be present, *i.e.*, minimal and sluggish circulation.

In our case all of these conditions were fulfilled. In order that the condition go without medical notice, it is the usual finding that these cases are reported in the lower classes of society.

According to Mozzetti-Monterumici, the average length of time a lithopedion is carried is from ten to twenty years, the oldest on record being forty years. Our patient retained her lithopedion eighteen years. During this time she went through the usual four cycles found in these cases:

1. Onset of pregnancy with usual symptoms and findings.
2. Termination of pregnancy.
3. A latent period of indefinite time.
4. Late symptoms.

The finding at operation of a calcified mass in the pelvis, the retained placenta, is most unusual. Bland *et al.*[2] state that no trace of the placenta is ever found, it presumably being absorbed. The literature makes no reference to the finding of the placenta in the case reports. An X-ray of the abdomen after our patient had recovered showed this calcified mass in the lower left pelvis. We felt that this was a retained placenta which had undergone calcification similar to that of the fetus and therefore is the first case of this type to be reported.

Conclusion: There is reported a full term lithopedion, which had been carried eighteen years, with a retained calcified placenta.

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1000 West Grace Street.

SULFANILAMIDE IN BURNS.

B. C. GRIGSBY, M.D.,
Bonny Blue, Virginia.

B. G., age three, received severe burns to his face, neck, arms, chest and upper half of abdomen by pulling a pan of hot grease off the stove on himself, producing large vesicles over these areas.

The skin was partially destroyed and large pieces of the burned tissues were removed at the first dressing. Subsequent dressings removed more of the destroyed skin. At first these areas were dressed with adhesive strips to remove the destroyed tissues and to aid epithelization. After the denuded areas had started to heal, boric acid ointment was used locally. Sulfanilamide, gr. V every four hours, was given along with aspirin, gr. one, every two hours, from October 1 to October 10, 1939. Burned September 28, 1939. Discharged October 14, 1939. Recovered.

Mrs. R. W., age thirty-eight, received severe burns to her buttocks (complete) and the upper third of her thighs, posteriorly. The skin was partially or completely destroyed, and large pieces of burned tissues were removed at the first and subsequent dressings. Strips of adhesive were first used with boric acid ointment after the areas began to heal. Sulfanilamide, gr. X, and acetophen every four hours, were used for two weeks. Burned December 12, 1939. Discharged January 5, 1940. Recovered.

Case number one ran a low grade temperature for two or three days.

Case number two ran a temperature for about four days. After she was well on the road to recovery from her burn, she developed a mild pyelitis of about three days' duration.

COMMENT

No infection developed in either of these cases. Only a small amount of serous fluid was present on the burned areas after all the destroyed tissues were removed.

The healing period for burns as extensive as these was unusually short.

The amount of scar tissue was reduced to a minimum.

Signs of toxæmia were reduced.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for March, 1940, compared with the same month in 1939, follows:

	1940	*1939*
Typhoid and Paratyphoid Fever	13	21
Diphtheria	57	69
Scarlet Fever	201	130
Measles	438	1,587
Meningitis	6	13
Poliomyelitis	1	0
Rocky Mountain Spotted Fever	1	0
Typhus Fever	0	0
Undulant Fever	0	2
Tularaemia	1	1

MATERNAL MORTALITY IN VIRGINIA

An intensive study of maternal deaths has been planned and recently put into operation by the Maternal Welfare Committee of the Medical Society of Virginia and the State Department of Health.

A review of mortality in Virginia during 1927 and 1928 showed a total of 783 deaths due to conditions associated with pregnancy and childbirth. The maternal mortality rate for that period was 6.8 per 1,000 live births. First among the causes was septicemia with 304 deaths; second was albuminuria with convulsions accounting for 217 deaths.

There has been a reduction in the number of deaths since the previous survey. The provisional rate of 5.0 has been given for 1939.

The present survey was begun as of December 1, 1939, and will cover a period of at least one year. There will be no identification shown on any report.

The inquiry will include a review of the information on the death certificates, a visit to the attendant physician, and calls upon midwives and others who may have essential information.

Through March of this year fifty-three maternal deaths have been reported. Not all of these cases have as yet been reviewed. Leading among the causes given for these deaths are:

Eclampsia	10
Pneumonia	7
Abortion	5
Hemorrhage	4
Pulmonary embolism	4
Puerperal infection	4

It is noteworthy that eclampsia is the chief cause of death for the three-months' period. No explanation can be given for this situation. However, one of these cases could not be reached by a physician during the recent snow. Season and temperature are not satisfactory explanations for the existence of the high incidence of the toxemias during this period. Causes not listed are responsible for numbers smaller than shown above.

The reports will be studied in detail by the Maternal Welfare Committee of State Medical Society. An effort will be made to segregate those deaths which might have been preventable and to determine the various factors involved. Among other inquiries, the personal economic situation and neglect on the patient's part will be considered.

LABORATORIES AND THE PREMARITAL LAW

Recently the premarital examination bill, sponsored by the State Medical Society, was passed by the General Assembly and signed by the Governor. This new law becomes effective August 1, 1940, and will require that a standard serologic test be made on each applicant as a prerequisite for marriage. It further requires that these tests be made in laboratories approved by the State Health Commissioner. Section (d) of the Premarital Law states:

> *"Serological tests required by this section shall be made by the State Department of Health or by a laboratory approved for such purpose by the State Health Commissioner; serological tests used shall be such as are approved by the State Health Commissioner."*

In order that city, private, and semi-private laboratories might be approved to participate in this program, it was necessary that a serologic evaluation survey be made of all laboratories. Thirty-two city and private laboratories applied to participate in the survey which was begun March 20. Doubtless more

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laboratories will desire approval. A second survey will be started as soon as the present one is completed. All laboratories desiring approval should communicate with the State Health Department.

New Members

New Members of the Medical Society of Virginia, since the list published in the October 1939 issue of the MONTHLY, are:

Dr. Joseph Eagle Barrett, Marion.
Dr. Robley Dunglison Bates, Jr., Richmond.
Dr. Klaus W. Berblinger, Norfolk.
Dr. William Russell Bishop, Flint Hill.
Dr. William Nicholas Botts, Appalachia.
Dr. Charles Pugh Brown, Norfolk.
Dr. Brown H. Carpenter, Danville.
Dr. Edgar Childrey, Jr., Richmond.
Dr. John Washington Clark, Front Royal.
Dr. Louise Leland Clark, Chester.
Dr. William Henry Copley, Richmond.
Dr. Jesse Hill Crouch, Richmond.
Dr. Hubert Dinwiddie Crow, Buckingham.
Dr. Dexter Davis, Roanoke.
Dr. Charles Harris Dow, Chilhowie.
Dr. Patrick Henry Drewry, Jr., Richmond.
Dr. Garland Dyches, Dillwyn.
Dr. Thomas Shepherd Englar, Charlottesville.
Dr. William Hughes Evans, Richmond.
Dr. James Bauer Funkhouser, Marion.
Dr. William Grossman, Richmond.
Dr. Gordon Douglas Hall, Dumbarton.
Dr. Hubert Lee Hamilton, Goshen.
Dr. Thomas Hamilton Hogshead, Staunton.
Dr. John Paul Jones, Richmond.
Dr. Paul Kimmelstiel, Richmond.
Dr. Eugene Markley Landis, Charlottesville.
Dr. Ralph Maurice Lechausse, Pardee.
Dr. Ludwell Fitzhugh Lee, Fredericksburg.
Dr. Norbert N. Lindner, Clifton Forge.
Dr. Clabe Webster Lynn, Petersburg.
Dr. John Fulton McGavock, Crozet.
Dr. William Province McGuire, Winchester.
Dr. Marvin Everett McRae, Chatham.
Dr. Theodore Maisel, Richmond.
Dr. Edith Irene Miller, Petersburg.
Dr. Eugenia Elizabeth Murphy, Arlington.
Dr. Philip Wood Oden, Richmond.
Dr. Albert Joseph Orlosky, Arlington.
Dr. John Claiborne Palmer, Radford.
Dr. Harris Preston Pearson, Roanoke.
Dr. James Brooke Pettis, Staunton.
Dr. Cullen Pitt, Richmond.
Dr. Frank Noera Pole, Richmond.
Dr. Harry Howard Pope, Ivanhoe.
Dr. Richard C. Potter, Jr., Marion.
Dr. Mowey Presberg, Roanoke.
Dr. Henkel Moser Price, Brook Hill.
Dr. Chester Loris Riley, Winchester.
Dr. Spotswood Robins, Richmond.
Dr. David Herman Rosenfeld, Richmond.
Dr. Herbert Grayson Ruffin, Arvonia.
Dr. William T. Sanger, Richmond.
Dr. Hilmar Reinhold Schmidt, Petersburg.
Dr. Jerome Joseph Shapiro, Richmond.
Dr. Eugene Bowie Shepherd, Madison Heights.
Dr. Ralph Alonzo Stata, Oceana.
Dr. James Carl Trivett, Page.
Dr. Vernon Atwill Turner, Staunton.
Dr. James Volpe, Jr., Jonesville.
Dr. Oswald Massena Weaver, Colony.
Dr. Hazael Joseph Williams, Brownsburg.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. HENRY A. LATANE, Alexandria.
President-Elect—MRS. GRIFFIN HOLLAND, Eastville.
Recording Secretary—MRS. T. N. HUNNICUTT, Newport News.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Parliamentarian—MRS. JOSEPH BEAR, Richmond.
Chairman, Press and Publicity—MRS. HENRY M. SNEAD, Petersburg.

Norfolk Auxilary.

The annual luncheon of the Woman's Auxiliary to the Norfolk County Medical Society was held on March 26. Mrs. Henry A. Latane, of Alexandria, president of the Auxiliary to the Medical Society of Virginia, was the guest of honor and principal speaker. She discussed socialized medicine and the responsibility of medical auxiliary members to the community as wives of doctors.

In observance of "Doctors' Day", Mrs. M. N. King presented a book, "Medicine in Virginia in the Nineteenth Century" to the Norfolk County Medical Society. This book was accepted on behalf of the Society by Dr. Lockburn B. Scott, its secretary. Dr. Scott also paid a brief tribute to the late Dr. D. Lee Hirschler, president of the Society.

Dr. Julian L. Rawls spoke on behalf of the Cancer Control Campaign and gave briefly the history of the Norfolk Diagnostic Control Clinic. Dr. N. G. Wilson spoke on tuberculosis and described the work of the Anti-Tuberculosis League of Norfolk. He

stated that there should be a preventorium in every congressional district.

The speakers were introduced by Mrs. William Lett Harris, program chairman. Mrs. Southgate Leigh, honorary life member of the local auxiliary and a founder of the Woman's Auxiliary to the American Medical Association, was also introduced.

Preceding the luncheon and program, the Auxiliary, in a short business session, decided to cooperate with the Junior Woman's Club in conducting the Cancer Control Campaign. The Auxiliary will have charge of the booth in the Medical Arts Building.

The Reverend Rowland Wagner, pastor of the Central Baptist Church, spoke on the Community Fund Drive.

A nominating committee, composed of Mrs. Millard Savage, chairman, Mrs. C. J. Devine, Mrs. B. A. Doggett, Mrs. Elmore Jones, and Mrs. Rufus Kight, was appointed to bring a slate of officers to the next meeting.

Mrs. Herbert W. Rogers, president, presided.

(MRS. B. D.) EUGENIA H. JONES,
Chairman, Press and Publicity.

Northampton-Accomac.

The Woman's Auxiliary to the Northampton-Accomac Medical Society held its April meeting on the 2nd at the home of Mrs. C. E. Critcher of New Church, with seventeen members present.

In the absence of the president, Mrs. W. B. Trower, the meeting was conducted by Mrs. J. L. DeCormis, vice-president.

Ways and means of raising money were suggested. $1.55 was collected for the Jane Todd Crawford Memorial and $20.00 was asked to be raised for the Leigh-Hodges-Wright Memorial Bed.

The adoption of a constitution and by-laws was postponed until the next meeting.

Mrs. J. Rooker White read a brief history of "The Medical Profession". Mrs. E. W. P. Downing presented "Our Doctors as Husbands".

Our Auxiliary was doubly honored in having both our State president, Mrs. H. A. Latane, and president-elect, Mrs. Griffin Holland, present at this meeting. Mrs. J. H. Hiden introduced Mrs. Latane who brought greetings from Norfolk and Alexandria and gave a very interesting and instructive talk on "Ideals for Doctors' Wives".

The Wagner Health Bill was also explained to the Auxiliary.

Our Public Relations chairman presented a copy of the platform of the A. M. A. to each member.

A delightful social hour, with refreshments, followed the business meeting.

On April 8, the Auxiliary were the guests of the Northampton-Accomac Medical Society at a delightful dinner at the Eastville Inn.

Violin music, vocal selections, and tap dancing were greatly enjoyed during the dinner, which ended with all singing " 'Til We Meet Again".

The October meeting is to be an oyster roast at "Kendall Grove" with Mrs. Holland Trower.

An auction bake is also planned for this meeting and members have been asked to put a receipe in their donations.

CATHERINE RUSH TROWER,
(MRS. HOLLAND TROWER)
Chairman, Press and Publicity.

Petersburg Auxiliary.

A Jane Todd Crawford program was observed at the March meeting of the Petersburg Medical Auxiliary, when the story of her life was reviewed by Mrs. Hilmar Schmidt. Mrs. George Reese was hostess for this meeting, and at its close, tea was served.

This Auxiliary has been particularly active during the past month, sponsoring a very successful rummage sale to increase the Auxiliary's treasury, and helping with many other affairs which would come under the head of "public realtions" and health programs. Various members helped with the infantile paralysis drive, and the Auxiliary made a donation to this, and also to the cancer fund. During the week for enlistments for the cancer campaign, members of the Auxiliary "manned" the booths stationed at public places.

At our next meeting, we are looking forward to having our State president, Mrs. Latane, as our guest of honor. At this time, several new members who have recently joined our group, will also be entertained.

MRS. FLETCHER J. WRIGHT, JR.,
Press and Publicity Chairman.

Auxiliary to A. M. A.

A LAST REMINDER to make your reservation for the 18th Annual Convention of the Woman's Aux-

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iliary to the American Medical Association to be held at the Hotel Pennsylvania, New York City, June 10 to 14, 1940. New York has much to offer aside from the convention and we are sure you will not want to miss the opportunity of visiting New York this year.

Truth About Medicine

In addition to the articles previously enumerated, the following have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association:

Parke, Davis & Co.

Kapseals Theelol, 0.24 mg.

E. R. Squibb & Sons.

Sulfapyridine—Squibb.

Capsules Sulfapyridine—Squibb, 0.25 Gm. (3.38 grains).

Tablets Sulfapyridine—Squibb, 0.5 Gm. (7.7 grains).

The Upjohn Company.

Ampoules Bismuth Subsalicylate with Chlorobutanol in Oil, 1 cc.

Bismuth Subsalicylate with Chlorobutanol in Oil. 30 cc. Vials.

Winthrop Chemical Co., Inc.

Ampules Pontocaine Hydrochloride 'Niphanoid" for Spinal Anesthesia, 10 mg.

Ampules Pontocaine Hydrochloride "Niphanoid" for Spinal Anesthesia, 20 mg.

New and Nonofficial Remedies

The following products have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association for inclusion in New and Nonofficial Remedies:

Amniotin.—A liquid containing a highly concentrated, non-crystalline preparation of estrone (ketohydroxyestrin) together with a small varying amount of other estrogenic ketones extracted from the urine of pregnant mares. Amniotin is used either orally or by hypodermic injection of an oil solution in the same conditions for which estrone (theelin) and estriol (theelol) are recommended. The product is supplied in the following dosage forms: Amniotin in Oil, 2,000 International Units; Amniotin in Oil, 10,000 International Units; Amniotin in Oil, 20,000 International Units; Amniotin Capsules, 1,000 International Units; Amniotin Capsules, 2,000 International Units; Amniotin Capsules, 4,000 International Units; Amniotin Pessaries, 1,000 International Units; Amniotin Pessaries, 2,000 International Units. E. R. Squibb & Sons, New York. (*J. A. M. A.*, March 2, 1940, p. 764.)

Ampoules Mercuric Salicylate 0.065 Gm. (1 grain), 1 cc.—Each cubic centimeter contains mercuric salicylate (New and Nonofficial Remedies, 1939, p. 319) 0.065 Gm. (1 grain) and quinine and urea hydrochloride 0.02 Gm. (1/3 grain) suspended in a sweet almond oil and lanum base. Upjohn Company, Kalamazoo, Mich.

Ampoules Mercury Succinimide 0.02 Gm (1/3 grain), 1 cc.—Each cubic centimeter contains mercuric succinimide 0.02 Gm (1/3 grain) and chlorobutanol not more than 0.008 Gm. dissolved in distilled water. Upjohn Company, Kalamazoo, Mich.

Pulvules Sulfanilamide—Lilly, 2 grains.—Each pulvule contains sulfanilamide (New and Nonofficial Remedies, 1939, p. 466), 2 grains. Eli Lilly & Co., Indianapolis, Ind.

Pulvules Sulfanilamide—Lilly, 5 grains.—Each pulvule contains sulfanilamide (New and Nonofficial Remedies, 1939, p. 466), 5 grains, Eli Lilly & Co., Indianapolis, Ind. (*J. A. M. A.*, March 16, 1940, p. 961.)

Tablets Sulfapyridine—Parke, Davis & Company, 0.5 Gm. (7.7 grains).—Each tablet contains sulfapyridine (Revised Supplement to New and Nonofficial Remedies, 1939, p. 28; also *The Journal*, January 27, 1940, p. 327), 0.5 Gm. Parke, Davis & Company, Detroit, Mich.

Sulfapyridine—Squibb.—A brand of sulfapyridine—N.N.R. (Revised Supplement to New and Nonofficial Remedies, 1939, p. 28). The product is marketed in the form of capsules, 0.25 Gm. (3.38 grains) and tablets, 0.5 Gm. (7.7 grains). E. R. Squibb & Sons, New York, N. Y.

Barbital—Abbott Tablets, 5 grains.—Each tablet contains barbital—Abbott (New and Nonofficial Remedies, 1939, p. 115), 5 grains. Abbott Laboratories, North Chicago, Ill. (*J. A. M. A.*, March 30, 1940, p. 1156.)

Book Announcements

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

American Medical Association—The vitamins.

Armstrong, B. N.—The health insurance doctor.

Armstrong, H. G.—Principles and practice of aviation medicine.

Artificial limbs and their relation to amputations.

Ashman & Hull—Essentials of electrocardiography.

Barnes, A. R.—Electrocardiographic patterns.

Beck, A. C.—Obstetrical practice.

Bertwistle, A. P.—Radiographs.

Bigger, J. W.—Man against microbe.

Blanchard, C. E.—Romance of proctology.

Boos, W. F.—The poison trail.

Bush, I. J.—Gringo doctor.

Butler, N. M.—Across the busy years.

Cabot, H.—The patient's dilemma.

Cannon, R.—Lee on the Levee.

Carter, J. B.—The fundamentals of electrocardiographic interpretation.

Chance, B.—Ophthalmology.

Clark, K. C.—Positioning in radiography.

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Clark, W.—Photography by infra-red.
Clark, W. E. LeG.—The tissues of the body.
Clement, F. W.—Nitro-oxide oxygen anesthesia.
Cushing, H.—The medical career.
Cutler & Zollinger—Atlas of surgical operations.
Dayton, N. A.—New facts on mental disorders.
De Leeuw, H.—Flower of joy.
Dickinson, R. L.—Control of conception.
Dickson, F. D.—Functional disorders of the foot.
Eller, J. J.—Tumors of the skin.
Ferguson, A. B.—Roentgen diagnosis of the extremities and spine.
Fisher, M.—William B. Wherry, bacteriologist.
Fluhmann, C. F.—Menstrual disorders.
Gerber, S. R.—Alcohol and traffic.
Gershenfeld, L.—Biological products.
Graham, H.—The story of surgery.
Greenhill, J. P.—Office gynecology.
Hamblen, E. C.—Endocrine gynecology.
Harpole, J.—Body menders.
Harvard School of Public Health—Virus and rickettsial diseases.
Hill & Pillsbury—Argyria: the pharmacology of silver.
Hiscock, I. V.—Ways to community health education.
Holley, J. A.—The recollections of a country doctor.
Homans, J.—Circulatory diseases of the extremities.
Jackson, D. E.—Experimental pharmacology and materia medica.
Jackson & Jackson—Cancer of the larynx.
Jeffery, M. P.—Dr. Ida: India (the life story of Ida S. Scudder).
Jorpes, J. E.—Heparin: its chemistry, physiology and application in medicine.
Kagan, S. R.—Jewish contributions to medicine in America.
Katz & Johnson—Elements of electrocardiographic interpretation.
Kercher, J.—Fifty years a doctor.
Kleitman, N.—Sleep and wakefulness.
Lampson, R.—Death loses a pair of wings; the epic of Gorgas and the conquest of yellow fever.
Liljencrantz, E.—Cancer handbook of the tumor clinic.
McCulloch, A.—Gas analysis.
McCulloch, E. C.—Disinfection and sterilization.
McDonough, E. G.—Truth about cosmetics.
McGregor, A. L.—A synopsis of surgical anatomy.
Magnuson, P. B.—Fractures.
Mangham, S.—Earth's green mantle.
Marburg & Helfand—Injuries of the nervous system including poisonings.
Marshall, C. McI.—Caesarean section, lower segment operation.
Martin, E.—Dextrose therapy in everyday practice.
Mills, C. A.—Medical climatology.
Mitchiner & Cowell—Medical organization and surgical practice in air raids.
Muenscher, W. C.—Poisonous plants of the United States.
Ogilvie, R. F.—Pathological histology.
Perkins, W. H.—Cause and prevention of disease.

Physical Diagnosis. By Elmer and Rose. Revised by HARRY WALKER, M.D., F.A.C.P., Associate Professor of Medicine, Medical College of Virginia, Richmond, Va. Eighth Edition. St. Louis. The C. V. Mosby Company. 1940. Octavo of 792 pages. With 295 illustrations. Cloth.

This book is reviewed editorially in this issue of the MONTHLY.

Cancer of the Larynx. By CHEVALIER JACKSON, M.D., Sc.D., LL.D., F.A.C.S., Honorary Professor of Broncho-Esophagoscopy and Consultant in Broncho-Esophagologic Research, Temple University Medical School, Philadelphia. And CHEVALIER L. JACKSON, A.B., M.D., M.Sc. (Med.), F.A.C.S., Professor of Broncho-Esophagology, Temple University Medical School, Philadelphia. W. B. Saunders Company. Philadelphia. 1939. Octavo of x-309 pages. Illustrated. Cloth. Price, $8.00.

The Jacksons have divided their monograph on *Cancer of the Larynx* into three parts, the first having to do with the procedures used in diagnosis and treatment of laryngeal cancer; the second part is devoted to general considerations of the disease with particular reference to symptomatology, pathology, and differential diagnosis; the third part contains historical notes on cancer of the larynx, laryngofissure, biopsy, laryngectomy, the artificial larynx, and irradiation in treatment. Laryngofissure is stressed as the desirable method of treatment when the lesion is diagnosed early and is operable, and irradiation is advised for the inoperable cases. The book is well illustrated. Operations are carefully described, and there are many colored plates showing various types of laryngeal lesions. Those interested in laryngeal disease will find the volume a valuable one.

PORTER P. VINSON, M.D.

The Romance of Proctology. Which is the Story of the History and Development of This Much Neglected Branch of Surgery from its Earliest Times to the Present Day, Including Brief Biographic Sketches of Those Who Were Its Pioneers. By CHARLES ELTON BLANCHARD, M.D. 1938. Medical Success Press. Youngstown, Ohio. Octavo of 284 pages. Cloth. Price, $4.50.

In the foreword of this humorous but caustic work, the author points out the prevalence and antiquity of rectal troubles by quoting the Bible to the effect that Ashbod was "smitten with emerods."

The first four chapters are devoted to medical history without reference to proctology. The remainder of the book deals largely with the technic of the injection treatment of rectal conditions and the defense of ambulant proctology. His experiences with carcinoma have been disheartening. On page 244, he states that "It is my firm conviction that surgical operations for malignancy of any of the internal or-

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gans have seldom if ever cured a case. In America we have had numerous 'cancer cures' but personally I have never seen any satisfactory results from any of them." He infers that he has kept non-operative patients with carcinoma comfortable for some years with intravenous injections of HCl, 1-500 solution in 10 cc. doses two or more times each week.

For the critical layman who likes nothing better than a name-calling contest between medical men, this book will have a wide appeal. For the proctologist who desires a detailed description of the ambulant method, it will doubtless be of value despite the author's frequent jibes at "orthodox" proctology and organized medicine.

A little of the latter adds piquancy to an otherwise prosaic subject—too much of it raises doubts as to whether this proctologist has not fallen into common error with the home-loving cuckoo with incompetent sphincters.

HARRY J. WARTHEN, M.D.

Hospital Service in the United States. 1940. Nineteenth Presentation of Hospital Statistics by the Council on Medical Education and Hospitals of the American Medical Association. The 1939 Census of Hospitals. Hospitals registered by the American Medical Association. Reprinted from the Hospital Number of the Journal of the American Medical Association. March 30, 1940. Pamphlet. Price, 50 cents.

Proctology For The General Practitioner. By FREDRICK C. SMITH, M.D., M.Sc., (Med); F.A.P.S., Proctologist to St. Luke's and Children's Hospital, Philadelphia; formerly associated in Proctology, Graduate School of Medicine, University of Pennsylvania. Illustrated with 142 half-tones and line engravings and 3 color plates. F. A. Davis Company, Philadelphia. 1939. Octavo of XV-386 pages. Cloth. Price $4.50.

This book is interestingly written and the interest starts right away. On page two one has the opportunity to disagree with the author concerning the relative cleanliness of the rectal cavity and on page three we can disagree violently with him concerning his statement that the ungloved finger is preferable for making rectal examinations. It is inconceivable that such an erudite touch is necessary or needed, and widespread belief to the contrary would have an unhappy influence on the satisfactorily increasing number of rectal examinations.

The arrangement of the text has much to recommend it since the author starts it with a full discussion of symptoms and leads on to examination, diagnosis and treatment. This arrangement increases one's interest in the book and makes it easy to read.

Dr. Smith has written this book for the general practitioner and the latter will find it concise enough yet thorough. Diagnostic and therapeutic measures are given in detail and the illustrations are plentiful and instructive.

W. W. R.

Accepted Foods, and Their Nutritional Significance. a publication of the Council on Foods of the American Medical Association. Pp. 512. Chicago. American Medical Association. 1939. Cloth. Price, $2.00 postpaid.

Accepted Foods, and Their Nutritional Significance contains descriptions and detailed information regarding the chemical composition of more than 3,800 accepted products, together with a discussion of the nutritional significance of each class of foods. The book provides also the Council's opinion on many topics in nutrition, dietetics and the proper advertising of foods.

This book will be a welcome reference book for all persons interested in securing authoritative information about foods, especially the processed and fabricated foods which are widely advertised. The accepted products are classified in various categories; fats and oils; fruit juices including tomato juice; canned and dried fruit products; grain products; preparations used in the feeding of infants; meats, fish and sea foods; milk and milk products other than butter; foods for special dietetic purposes; sugars and syrups; vegetables and mushrooms; and unclassified and miscellaneous foods, including gelatin, iodized salt, coffee, tea, chocolate, cocoa, chocolate flavored beverage bases, flavoring extracts, dessert products, baking powder, cream of tartar, baking soda, cottonseed flour. There is a suitable subject index as well as an index of all the manufacturers and distributors of food products that stand accepted by the Council on Foods.

Essentials of the Diagnostic Examination. By JOHN B. YOUMANS, B. A., M. S., M. D., Associate Professor of Medicine and Director of Postgraduate Instruction, Vanderbilt University Medical School. New York. The Commonwealth Fund. 1940. 12mo of xvi-417 pages. Illustrated. Cloth. Price, $3.00.

This text was written as an aid to physicians, small hospitals and small clinics wishing to establish a laboratory. It gives information for installing and maintaining such laboratories at small outlay. Many helpful suggestions are given for extemporized equipment and all of the time-proven methods suitable for routine work have been included.

R. C. BECK, M.D.

XUM

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Editorial

Mental Disease and Modern Medicine.

Ten thousand sick folks constitute a group equal in mere numbers to the population of a town of moderate size. At the conclusion of Virginia's fiscal year on June 30, 1939, there were under treatment in the State's six institutions for mentally sick folks 10,525 patients. One of the institutions is for the white mentally subnormal and the epileptic; another is for Negroes, the feeble-minded and the epileptic. The other four State hospitals minister to the mentally diseased—the so-called insane or the psychotic. Twenty-nine physicians, as members of the medical staffs of the six hospitals, have professional access to the more than ten thousand patients. Of that number of physicians six are Superintendents, each charged with directing the medical work of his hospital and with the administration of its affairs. The Superintendents are so busily engaged in their executive duties that they should have little time for clinical medical work. The actual diagnostic investigative procedures and the therapeutic ministrations must be carried out chiefly by the assistant physicians—twenty-three of them, for more than 10,000 sick folks. In the six institutions there are, in addition to attendants, women and men, without formal training, forty graduate nurses. During the last hospital year, ending June 30, 1939, there were admitted to the six institutions 3,414 patients. The cost of maintaining the institutions—all six of them—for that year was more than one million and three quarter dollars. Exactly, the maintenance cost was $1,831,383.79. The average cost of caring for a patient for a year was $175.85.

What do the figures say in every-day language about a great group of sick folks, confined in hospitals, in which few physicians have access to them? Often it is difficult, because of the patient's abnormal mental condition, to make a thorough and a satisfactory physical examination. It is often equally as difficult to investigate the patient's mental qualities—the intellect, the emotions, the spiritual state. Yet if a diagnosis is to be evolved a thorough study of each patient must be made. Such a study requires time, patience, skill. In the State hospital system there is one physician to every 360 patients—if the Superintendents be included in the apportionment. If they be not included 460 patients fall to each physician. The forty graduate nurses in the system allow one such nurse to every 260 patients. Ten patients are admitted each day to the six hospitals. The first step after admission of the patient is a thorough examination of body and of mind. But such a study requires time and skill. A patient is maintained for somewhat less than fifty cents a day. The allocation by the State of such a supporting fund for each patient must often provide clothing, as well as room, food, drugs, nursing and medical care.

Twenty-three physicians cannot afford adequate

medical care to more than 10,000 patients and, in addition to that work, make comprehensive examinations of more than 3,000 new patients admitted during the year. Forty graduate nurses are almost lost in dilution in more than 10,000 patients. The facilities of modern medicine cannot be brought to patients for fifty cents each a day.

Is the State making any effort to bring the work of the State hospitals within the domain of modern medicine? What are the evidences of the effort? The general administration of the hospital system is thoroughly laymanized. The General Hospital Board is composed chiefly of lay people, untrained in nursing, in medicine, and wholly inexperienced in hospital administration. How can such a Board bring about improvement in a condition of which it has no understanding? If the State can afford modern hospital buildings why cannot it provide also modern medical and nursing service, fit in quality and adequate in quantity?

A bill introduced into the last General Assembly of Virginia would, if adopted, have created a Commissioner of Mental Hygiene and Hospitals. The bill purported to give the Commissioner large authority in exercising supervision over the State hospital system. But the Commissioner would have been the mere puppet of the Governor. He would have been appointed to serve "at the pleasure of the Governor" and his term of office would have been contemporaneous with that of the appointing Governor. The bill did not even require that the Commissioner should be a physician, and there were no intimations that he should know anything about psychiatry or about hospital administration.

The present State Hospital Board was to be continued under the new name of the Board of Mental Hygiene and Hospitals, but it was to be deprived of practically all duties and responsibilities. Most of the functions of the present Hospital Board were to be exercised by the Commissioner of Mental Hygiene and Hospitals. And the Commissioner was to be easily removeable by the Governor. Such an arrangement would have placed the State hospitals directly under the control of the Governor.

The supervision of the State hospital system is already thoroughly laymanized. Had the hopes of the Governor been realized through adoption of the proposed legislation the State hospital system would have become as thoroughly politicalized. But the General Assembly killed the bill as dead as Hector.

The activities of the State in reference to public health should be carried on under the auspicies of a Department of Health. For administrative convenience or necessity it may be advisable for several years to think of sickness of body and also sickness of mind. Such thought would express itself in two divisions in the Department of Health—a Division of Public Health (the present State Board of Health), and a Division of Mental Hygiene. Each Division should function under the supervision of a Director, each of equal rank and authority with the other. Sickness of body and sickness of mind do not easily separate and differentiate themselves in the patient. One does not experience sickness in pigeonhole fashion. Disease is unlikely to be limited in dysfunction to the kidneys, to the liver, to the emotions or to the psyche. A Department of Health would tend to encourage all of us to conceive of a human being as a biological totality, in whom disease—disturbance of function—may manifest itself either as psychic or as somatic poor health, or as both.

JAMES K. HALL.

The Quincentenary of Printing.

About 1440 somebody somewhere in Europe invented movable type and we celebrate this year the quincentenary of that momentous event. The discovery in China was still earlier. It is believed on good authority that there in the year 868 one Wang Chieh employed wooden blocks for printing purposes and that in the year 1041 one Pi Sheng conceived the method now known as printing with movable type.

The first printed documents in Europe were Papal Indulgencies. The Mazarin or Gutenberg Bible was the product of the Mainz Press in 1454. In England the first printing was done in 1476; in the Western Hemisphere the first was done in Mexico City, by Giovanni Paoli, in 1539; in the United States, at Cambridge, Massachusetts in 1638, and in Virginia, by William Parks at Williamsburg in 1730.

Medicine shared with religion the interest of the early printers. Of those books which were published before 1500 and which are now known as *incunabula* no fewer than 400 dealt with medical subjects. The early medical books, like the early books on other subjects, were for the most part translations of manuscripts of great antiquity and authority, such as those of Hippocrates and Galen, Avicenna and Celsus. Some of them were the embodiment of the thought

and experience of contemporary doctors. The tracts in Sudhoff's memorable collection of early works on syphilis were for the most part published before 1500, as were the *Cirurgia* of Hieronymous Brunswig and Johann Ketham's *Fasciculus Medicinae.* Medicine owes a great debt to printing and on this birthday of the art doctors everywhere will be thinking what the printed page has done to preserve the record of scientific thought and experiment and what a stimulus it has given to continuous investigation.

On a wider horizon doctors will share with all cultured persons the acclaim of books and the makers of books. Through the year we will be paying tribute to the great printers of all time—Gutenberg in Germany and Caxton and Wynken de Worde in England, Plantin in Antwerp, Elzevir in Leyden, and among the moderns, D. B. Updike who is producing in Boston today books worthy of the best of his predecessors. The magnificent folios and exquisite texts of such craftsmen will always be objects of wonder and amazement.

We will be thinking of the great writers of the past and present, teachers and artists, prophets and seers, who through the medium of books have become immortal. Without printing few names would survive the generation in which they were current.

We will be thinking of the great libraries of the world, the Bibliothèque Nationale, the British Museum, the Library of Congress, and of the eleven million and more books they contain. The imagination is staggered by the vast output of the world's printing presses. By a very simple calculation it can be shown that it would require a thousand scholars, reading a book a week, 210 years to peruse the volumes in these three libraries alone.

Printers, libraries, books will be uppermost in the minds of those who contemplate five hundred years of printing. What civilization would be without printing no one knows. One thing is certain: the influence of the printed page continues to be the most potent factor in shaping human destiny.

Revamping an Old Book.

Books, like people, grow old. As they grow old one of two fates awaits them. If they are great books —classics, we call them—they will be endowed with a sure immortality. If they are not great books—just ephemeral writing—they will eventually become as dead as the paper on which they are written. Medical books are no exception to the rule.

Publishers, especially the publishers of medical books, know, however, that old age can sometimes be deferred. The accepted way of deferring it is by revision. Da Costa's *Surgery* and Osler and McCrae's *Medicine* and Howell's *Physiology* are cases in point. When the authors of worthwhile books die, new revisionists are called in and the work of streamlining the old model goes on until even the most enterprising publisher is willing to call quits.

In 1917 W. D. Rose, Associate Professor of Medicine in the University of Arkansas, published a *Physical Diagnosis* for "the medical student and the busy practitioner." The volume must have sold well because it went through five editions. In 1930 the publishers requested Warren P. Elmer, Associate Professor of Clinical Medicine in the Washington University School of Medicine, to undertake another revision. While retaining much of Rose's original text, Elmer made radical changes. In 1935 the book was again revised by him, and now in 1940 we have before us the eighth edition of *Elmer and Rose's Physical Diagnosis* revised by Harry Walker, Associate Professor of Medicine in the Medical College of Virginia.

This latest revision is not just a face lifting job, achieved with a few new illustrations and with a few sections rewritten. On the contrary it is a conscientious effort to put new life into a volume which had undergone many previous operations. The last revisionist went to work with scissors and paste, clipping one hundred pages from the preceding editions. Then he called in Drs. D. W. Luken of St. Louis, J. A. Shield, P. P. Vinson, Paul Kimmelstiel and Harvie DeJ. Coghill of Richmond, Virginia, to contribute chapters on special subjects. He reserved for himself the important function of making the remainder of the text conform to the generally accepted present day opinions. Dr. Walker believes that recent advances in pathology and more exact methods of clinical diagnosis have rendered many physical signs, which were once regarded as of great value, now worthless. It would have been interesting had he enumerated just what those outmoded signs were. His alterations and additions have added to the value of a standard text. May there be many happy returns!

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President's Message

Now that the Legislature of the State of Virginia has adjourned, the members of the Medical Society of Virginia can give their attention to some subjects other than those concerning the struggles of the General Assembly.

However, it might first be interesting very briefly to recall the fate of some of the Bills considered by the General Assembly in which our Society was primarily interested.

The Bill concerning the premarital blood test was made a law in a manner most acceptable to our "Committee on Syphilis Control". Dr. Ennion S. Williams, Chairman, and the other members of that committee presented this Bill in such a form that it met with very little opposition.

After having made a study in other states which have tried to regulate birth control by statute, your Council, in association with Dr. I. C. Riggin, our capable Health Officer, decided not to ask the General Assembly for any action on this subject. This will probably be the subject of discussion for some future meeting of the General Assembly, and if it is, it is hoped by such a time some satisfactory statute will have been found by those states now experimenting with efforts in that direction.

It was also considered unwise, at this Session of the General Assembly, to request any change in the laws concerning present methods of licensing nurses to practice their profession in the State. However, it is hoped by the time of the next meeting of the General Assembly, our Advisory Committee to the State Board of Nurses' Examiners and the Board of Nurses' Examiners itself will have some constructive suggestion which will tend to lessen the complaints now coming from our smaller communities throughout the State relative to the nursing situation in such localities.

The failure of the General Assembly to accept Governor Price's Re-organization Plan leaves those responsible for the care of the mentally sick in somewhat of a dilemma. However, I personally feel that Governor Price will make every possible effort to continue the excellent start already made by the State Hospital Board.

The Bill to license "Chiropractors" was defeated in spite of the usual political efforts made by this group. As a profession whose chief obligation is the protection of health of our communities, we should, in the future, try to influence the various Commonwealth Attorneys to do their duty in enforcing the laws as regards these men who, largely through their gross ignorance, are spreading tuberculosis and other contagious diseases, obstructing the control of cancer, etc.

Before even mentioning the real objective of this annual message, I, as your president, and for you, want to express our gratitude to Dr. J. Morrison Hutcheson, Chairman of the Legislative Committee, for the excellent and efficient work he and his coworkers did before the last General Assembly. It might interest you to know "no lobby" was maintained in Richmond. Such, in the opinion of your Council, would have been both degrading and ineffective—also expensive.

The big pleasant event, which is the excuse for this annual message this year, concerns our having accepted the invitation of the West Virginia State Medical Association to meet with them on July 29th, 30th, and 31st, at the Greenbrier Hotel, White Sulphur Springs, West Virginia. It is true that this popular resort hotel is located in West Virginia, but it is only a few miles from the border line between the two states. It is easily accessible from all parts of each state.

The Program Committees of the two states have had a joint meeting and arranged a most attractive and helpful three day convention. They have arranged to have eleven "out-of-the-state" speakers on the program. The addresses of nine of these nationally known speakers will be followed by two discussions, one member from each state having been selected to make these discussions. At lunch every day each essayist who has read a paper that morning will be given a separate dining room, and anyone wanting to ask any questions of any one of these invited guests will be given ample opportunity to do so. In order to encourage the asking of questions there will be a printed slip of paper at each plate on which questions can be written. It has been found that this method produces much valuable discussion. In the afternoons there will be round table discussions concerning many subjects. These round table dis-

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cussions will also be led by our various invited guests.

The hotel authorities have made a special rate of $9.00 per day. This includes room, meals, etc. While this price might appear excessive to many of us, still I feel quite certain most of us spend more than that amount each day when we attend medical meetings in any city, especially if we consider the usual unnecessary purchases we (or our wives) make in the enticing stores.

Mrs. H. A. Latane, President, and the chairmen of the other committees of the Woman's Auxiliary, have also arranged a most attractive program. I am certain all the wives will enjoy and appreciate a short vacation in such pleasant surroundings.

We all realize this meeting is somewhat in the nature of an experiment, but such joint meetings have been most successful elsewhere, and I hope and believe the members of the Medical Society of Virginia will combine with the members of the West Virginia State Medical Association to make this joint meeting such a success that in a few years we will all want to repeat the "experiment" and do so by inviting the West Virginia State Medical Association to join us in a meeting in Virginia.

HUGH H. TROUT, M.D.,
President, Medical Society of Virginia.

Department of Clinical and Medical Education of the Medical Society of Virginia

Postgraduate Clinics.

UNIVERSITY OF VIRGINIA

The twenty-fifth Postgraduate Clinic of the University of Virginia Medical School was held at the University on April 5 and 6 and the full program, as published last month, was carried out. The following visitors were in attendance:

Dr. O. L. Anderson, Richmond.
Dr. L. H. Apperson, Richmond.
Dr. H. L. Baptist, Ivy.
Dr. E. E. Barksdale, Danville.
Dr. C. D. Bennett, Chatham.
Dr. H. O. Bolling, Kingsport, Tenn.
Dr. W. E. Brown, Charlottesville.
Dr. O. K. Burnette, Culpeper.
Dr. W. W. S. Butler, Roanoke.
Dr. H. G. Byrd, Louisa.
Dr. H. T. Chelf, Culpeper.
Dr. L. E. Cockrell, Reedville.
Dr. F. D. Daniel, Charlottesville.
Dr. E. B. Dovell, Unionville.
Dr. R. E. Dyer, Washington, D. C.
Dr. T. S. Englar, Charlottesville.
Dr. R. T. Ergenbright, Charlottesville.
Dr. W. F. Evans, New York City.
Dr. H. B. Franchere, Alexandria.
Dr. M. E. Gardner, Washington, D. C.
Dr. R. W. Garnett, Danville.
Dr. C. M. Gratz, New York City.
Dr. E. J. Haden, Ore Bank.
Dr. E. C. Harper, Richmond.
Dr. Percy Harris, Scottsville.
Dr. W. F. Hartman, Swoope.
Dr. H. T. Hawkins, Waynesboro.
Dr. R. L. Hillman, Emory.
Dr. J. Minor Holloway, Fredericksburg.
Dr. E. M. Holmes, Jr., Richmond.
Dr. William James, Panama.
Dr. W. R. Jordan, Richmond.
Dr. T. F. Kennan, Raphine.
Dr. J. Paul Kent, Alta Vista.
Dr. D. M. Kipps, Front Royal.
Dr. Anita Lotti, Charlottesville.
Dr. J. W. Love, Alexandria.
Dr. Florence Mahoney, Staunton.
Dr. B. B. Mallory, Lexington.
Dr. W. M. Moir, Bristol.
Dr. J. E Moore, Baltimore, Md.
Dr. Carleton Moorman, Alta Vista.
Dr. J. O. Mundy, Charlottesville.
Dr. T. W. Murrell, Richmond.
Dr. D. O. Nichols, Charlottesville.
Dr. W. H. Paine, Charlottesville.
Dr. T. E. Patteson, Ransons.
Dr. B. H. Payne, Staunton.
Dr. M. J. Payne, Staunton.
Dr. C. G. Pearson, Charlottesville.
Dr. C. W. Putney, Staunton.
Dr. B. F. Randolph, Arrington.
Dr. C. M. Rice, Sweet Briar.
Dr. J. M. Ruffin, Durham, N. C.
Dr. J. J. Sapero, Washington, D. C.
Dr. C. L. Savage, Ashland.
Dr. F. B. Stafford, Charlottesville.
Dr. W. O. Smith, Alta Vista.
Dr. J. A. M. Thompson, Charlottesville.

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Dr. H. F. White, Fishersville.
Dr. M. J. W. White, Luray.
Dr. Reid White, Lexington.
Dr. W. H. Wood, Charlottesville.

MEDICAL COLLEGE OF VIRGINIA

At the eleventh annual Stuart McGuire Lectures and Spring Postgraduate Clinics of the College, April 16 and 17, the following visitors registered attendance:

Dr. L. M. Allen, Winchester.
Dr. L. H. Apperson, Richmond.
Dr. Q. H. Barney, Altavista.
Dr. H. E. Beard, Huntington, W. Va.
Dr. N. A. Beeton, Vinton.
Dr. Waylon Blue, Jonesboro, N. C.
Dr. T. N. Bowles, Durham, N. C.
Dr. John O. Boyd, Roanoke.
Dr. L. H. Bracey, South Hill.
Dr. F. L. Byers, Harrisonburg.
Dr. K. N. Byrne, Lexington.
Dr. G. C. Campbell, Staunton.
Dr. B. L. Carleton, Newport News.
Dr. W. D. Chase, McLean.
Dr. F. A. Clark, Charleston, W. Va.
Dr. J. E. Cole, Fredericksburg.
Dr. H. S. Daniel, Louisa.
Dr. Welch Dew, Fredericksburg.
Dr. C. W. Dorsey, Roanoke.
Dr. S. F. Driver, Troutville.
Dr. Elizabeth Edmunds, Lynchburg.
Dr. T. B. Ely, Jonesville.
Dr. C. D. Freeman, Jr., Portsmouth.
Dr. G. S. Fultz, Butterworth.
Dr. Jesse Gamble, Lincolnton, N. C.
Dr. John Gamble, Lincolnton, N. C.
Dr. Wilson O. Grimm, Huntington, W. Va.
Dr. A. M. Groseclose, Roanoke.
Dr. E. S. Groseclose, Lynchburg.
Dr. J. M. Habel, Jetersville.
Dr. E. J. Haden, Ore Bank.
Dr. P. L. Hill, Petersburg.
Dr. Paul S. Hill, Harrisonburg.
Dr. W. E. Hoffman, Charleston, W. Va.
Dr. L. H. Hoover, Clarksville.
Dr. A. P. Hudgins, Charleston, W. Va.
Dr. Frank L. Hughes, Ashland.
Dr. E. J Humphrey, Huntington, W. Va.
Dr. G. S. Hurt, Roanoke.
Dr. C. H. Iden, Berryville.
Dr. J. B. Jones, Culpeper.
Dr. J. L. Kinzie, Salem.
Dr. J. P. Lilly, Charleston, W. Va.
Dr. C. E. Llewellyn, Richmond.
Dr. R. H. Manson, McKenney.
Dr. E. W. McCauley, Rainelle, W. Va.
Dr. P. W. Miles, Danville.
Dr. R. S. Montgomery, South Hill.
Dr. Richard B. Nicholls, Norfolk.
Dr. Dan Nichols, Charlottesville.
Dr. T. E. Patteson, Ransons.
Dr. Thos. B. Payne, Fredericksburg.
Dr. Harrison Picot, Alexandria.
Dr. F. O. Plunkett, Lynchburg.
Dr. W. W. Point, Charleston, W. Va.
Dr. Wm. R. Pretlow, Warrenton.
Dr. C. W. Putney, Staunton.
Dr. G. A. Ratcliff, Huntington, W. Va.
Dr. M. L. Rea, Charlottesville.
Dr. Irvin Rifkin, Richmond.
Dr. C. L. Riley, Winchester.
Dr. Wm. M. Robinson, Richmond.
Dr. E. C. Schelin, Richmond.
Dr. L. L. Shamburger, Richmond.
Dr. H. C. Spalding, Richmond.
Dr. H. G. Steele, Bluefield, W. Va.
Dr. M. S. Stinnett, Buchanan.
Dr. E. L. Strickland, Wilson, N. C.
Dr. F. N. Taylor, Petersburg.
Dr. Beverley Tucker, Richmond.
Dr. A. E. Turman, Richmond.
Dr. Amelia V. Tutles, New Britain, Conn.
Dr. W. E. Vermilya, Clifton Forge.
Dr. J. J. Waff, Shenandoah.
Dr. H. F. White, Fishersville.
Dr. J. W. Wilkins, Mt. Oliver, N. C.

Short Courses.

A course in Internal Medicine and Surgery in Alexandria was completed on March 29 with a discussion of "Sterility" by Dr. Howard Kane of Washington, D. C.

The following doctors in Alexandria and vicinity attended the course which extended over a period of six weeks:

Dr. C. V. Amole
Dr. F. I. Bloise
Dr. C. L. Fifer
Dr. James A. Gooch
Dr. L. F. Hobbs
Dr. Henry A. Hornthal
Dr. Z. A. Hurianek
Dr. W. H. Janney
Dr. C. E. Jenkins
Dr. H. A. Latane
Dr. J. W. Love
Dr. C. MacRae
Dr. L. Powell
Dr. N. G. Schuman
Dr. J. A. Simms
Dr. Williams
Dr. Herbert D. Wolff

A course, begun in Newport News on March 21, continued through April 25. The meetings were held on Thursday evenings at eight o'clock and alternated between the Buxton Hospital and the Riverside Hospital. The attendance was good and the interest high.

Tentative plans are being made for courses to be held in Fauquier and Southampton Counties at an early date. Other courses will be organized as requests are received by the Executive Secretary.

GEORGE B. ZEHMER, *Executive Secretary.*

Proceedings of Societies

The Norfolk County Medical Society

Has had the unusual experience of losing two presidents within the past few months. Dr. Harvie S. Baker, elected president last summer, died the last of December, and his successor, Dr. D. Lee Hirschler, three months later. As this left no vice-president, Dr. Lockburn B. Scott, for over twenty-one years secretary, called a meeting and asked for nominations for president, whereupon he was unanimously named to this office until the annual meeting in June. It was also voted that he was to continue as secretary but would have the power to appoint some one to assist him. Dr. A. Brownley Hodges was asked to do this and also to act for Dr. Scott during his vacation in the summer. Dr. C. J. Andrews was elected vice-president for the remainder of this term.

In addition to its weekly meetings, this Society held its annual all-day clinic on April 17, with its morning session and luncheon at the Norfolk General Hospital. In the afternoon, Dr. Ben M. Baker of Baltimore presented a paper on The Therapeutic Use of Histamine and there was a round table discussion of Abdominal Pain. A cocktail hour and dinner followed at the Town Club.

Patrick-Henry Medical Society.

The regular quarterly meeting of the Society was held in Martinsville, April 5 at 7 P. M. with the president, Dr. W. C. Akers, presiding. A committee consisting of Drs. F. B. Teague, R. H. Walker and E. M. McDaniel was appointed to act as Advisory Board of the local Chapter of the Red Cross.

A committee consisting of Drs. R. H. Walker and C. R. Titus was appointed to draw up resolutions regarding membership of negro physicians in the State Society.

Delegates and alternates were elected for the meeting of the State Society in July, following which Dr. Henry Lee of Roanoke gave an interesting paper on "Folk Medicine".

R. H. WALKER,
Secretary.

The Orange County Medical Society

Held its regular quarterly meeting in the office of Dr. G. R. Elliott at Orange on April 5, at which time delegate and alternate were appointed for the meeting of the Society at White Sulphur Springs in July. Representatives from various clubs and groups met with the Society on this occasion for the purpose of organizing for the annual drive of the Virginia Field Army for the Control of Cancer.

The Northampton County Medical Society

Acted as hosts to the ladies of the Auxiliaries of the medical societies of the Eastern Shore and to members of the Accomack County Medical Society at a banquet held at Eastville Inn, April 8, which was attended by forty persons. Mrs. W. L. Cosby of Painter was in charge of entertainment and she and her daughter, Mrs. Polk Kellam, gave a violin duet, accompanied by Miss Dorothy Wise. Vocal numbers were also given by Mrs. John Van Kesteren and by Dr. James C. Doughty and Miss Martha Cosby gave vivacious tap dances.

Dr. C. E. Critcher of New Church spoke briefly as representative of the Accomack County Society and Mrs. Griffin W. Holland of Eastville was presented as president-elect of the Woman's Auxiliary to the State Society.

In a short business session, delegate and alternate were elected to the meeting of the State Society at White Sulphur Springs.

Alleghany-Bath County Medical Society.

At the annual meeting of this Society, Dr. L. A. Houff of Clifton Forge was elected president and Dr. R. P. Hawkins, also of Clifton Forge, was re-elected secretary-treasurer.

New members admitted to the Society recently are: Dr. Walter Vermilya and Dr. N. N. Lindner of Clifton Forge, and Dr. W. E. Roye of Covington. At its last meeting, delegates and alternates were elected for the next meeting of the State Society in July.

The Lynchburg Academy of Medicine

Held its regular meeting at a dinner on April 1. This was at the Lynchburg General Hospital, with Dr. Powell Dillard, vice-president, presiding. A symposium on Thoracic Disease by Dr. F. B. Stafford of Blue Ridge Sanatorium and Dr. E. C. Drash of the University of Virginia provided an excellent program. The meeting was one of the most

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largely attended of the Academy, with a number of visitors also present. The symposium was instructive and illustrated modern advancements in the treatment of pulmonary tuberculosis.

Medical Society of Northern Virginia

Held its regular meeting in Winchester on April 9, under the presidency of Dr. R. W. Stoneburner of Edinburg. Dr. J. E. Harris of Winchester is secretary. At the business session, delegates and alternates were elected to represent that organization at the meeting of the State Society in July. Dr. Byrd Leavell of the University of Virginia was the guest speaker, his subject being "Acute Glomerulo-Nephritis, Clinical Course and Treatment". Dr. William P. McGuire of Winchester read a paper on "Acute Oculoglandular Tularemia".

This Society is composed of doctors residing in the counties of Clarke, Frederick, Page, Rappahannock, Shenandoah and Warren.

The Southwestern Virginia Medical Society

Held its Spring meeting in Radford, April 17, with Dr. C. F. Manges, of Blacksburg, President, presiding. The attendance was the largest in the Society's history, there being seventy-five members for the afternoon session and one hundred and forty for the evening meeting.

A round table on Infections—"General and Local" —was held during the afternoon. Dr. Harry Walker and Dr. Thomas Beath, both of Richmond, were the leaders.

At the business session, the Society voted to continue the Farm Security Health Program for another year. Also approved was a resolution to grant honorary membership for members seventy years of age who had been members of the Society in good standing for a period of ten years. This action provides full membership for those eligible, without further payment of dues. For deceased members, the Society voted to expend the sum of five dollars for flowers or a like sum for an appropriate memorial in some charitable organization in which the deceased member was interested. Drs. E. L. Lawrence and J. H. Dunkley, both of Roanoke, were elected to Honorary Membership. Severeal new members were received into the Society. An invitation to meet in Marion for the Fall session was extended by Dr. Joseph R. Blalock.

The Staff of Saint Albans Sanatorium was the host to members of the Society for the Banquet Session. Following the dinner, the Society adjourned to the High School auditorium, where Dr. H. W. Bachman of Bristol gave an interesting paper on "Fibroma of the Thyroid Gland". The guest speaker, Dr. Walter C. Alvarez of the Mayo Foundation, was introduced by Dr. W. L. Sibley of Roanoke and addressed the Society on "Hints in the Treatment of Indigestion".

JAMES P. KING,
Secretary.

The Amelia County Medical Society,

A unit of the Fourth District Society, continues with its group gatherings and had its annual meeting at Amelia on April 10, with Dr. J. M. Habel of Jetersville presiding. In the rotation of members to office, Dr. James L. Hamner of Mannboro became president as well as secretary, and Dr. G. Craig Eggleston of Amelia was named vice-president.

The South Piedmont Medical Society

Held its regular semi-annual meeting at Turbeville on April 16, under the presidency of Dr. Ernest G. Scott of Lynchburg. Dr. J. A. Owen of Turbeville acted as secretary. This was an excellent meeting with about fifty doctors in attendance. The program included a symposium on Syphilis given by Drs. Walter McMann and E. E. Barksdale of Danville, and Dr. Edwin A. Harper of Lynchburg; the presidential address by Dr. Scott: and papers by Drs. Geo. B. Craddock and Wm. H. Higgins of Richmond, Dr. Ray A. Moore of Farmville, and Dr. John Hundley, Jr., of Lynchburg.

Officers elected for the ensuing year are: President, Dr. W. L. Eastlack of South Boston; vice-presidents, Drs. J. P. Kent of Altavista, Walter McMann of Danville, and W. R. Watkins of South Boston; and secretary, Dr. F. O. Plunkett of Lynchburg. It was voted to hold the next meeting in Lynchburg on the third Tuesday in November.

As a memorial to Dr. George A. Stover, a former president and for many years secretary of the Society, a minute's silent meditaton was observed by the members while standing.

The Virginia Obstetrical and Gynecological Society

Had its Spring Travel meeting in March, twenty-one members taking advantage of this opportunity to visit hospitals in New York and Jersey City. The Virginia members met at Hotel Pennsylvania, New

York, on March 25 and went to the New York Lying-In Hospital, where Dr. H. J. Stander took them in charge and they had a full morning in operative clinics and rounds. They were later Dr. Stander's guests at lunch, following which they spent the afternoon in discussions and demonstrations on extrauterine pregnancies and a staff conference. The large attending and house staff were at this and all cases about which there might be controversy concerning judgment were presented. The visitors then went to the University Club where they were guests of Dr. Nelson Sackett for cocktails. Later the group entertained sixteen of their New York and Jersey City friends at a seated dinner.

The 26th was spent at the Jersey City Medical Center, where Dr. Edward G. Waters substituted for Dr. S. A. Cosgrove who was sick. Here several cases came up for discussion, and addresses on pelvimetry, heart diseases, and ectopic pregnancy were given, with Dr. Waters showing by slides and movies his extra-peritoneal Caesarean section.

The following are the Virginia members and guests who attended: Drs. L. M. Allen of Winchester; C. J. Andrews, G. Bentley Byrd, R. S. Kight, Millard Savage and P. E. Thornhill of Norfolk; John O. Boyd, A. M. Groseclose, George S. Hurt and Rees Morgan of Roanoke; A. L. Carson, Jr., B. H. Gray, L. L. Shamburger, H. C. Spalding, Meyer Vitsky, H. H. Ware, Jr., and W. C. Winn of Richmond; S. E. Oglesby and F. O. Plunkett of Lynchburg; James Parrish of Portsmouth; and Harrison Picot of Alexandria.

News Notes

American Pharmaceutical Association.

The 88th Annual Meeting of this Association will be held in Richmond on May 5-11. The American Association of Colleges of Pharmacy, the National Association of Boards of Pharmacy and The Plant Science Seminar, constituent parts of the Association, will also hold their meetings at this time, and the programs of the four are so arranged that they do not materially conflict. The program will be divided into sections and several hundred papers on research and education will be presented.

A full program of entertainment has also been planned for the meeting, including visits to historic spots of Richmond, Williamsburg, Jamestown and Yorktown, seeing colonial homes and gardens, a reception at the Governor's Mansion, and numerous other trips.

The American Pharmaceutical Association is the organization which represents the scientific, professional and educational phases of pharmacy. It was organized in 1852 and since that date has published monthly a scientific journal. It has been active in stopping the importation into this country of adulterated and sub-standard drugs and has encouraged home production. The A. Ph. A. has contributed to the development of the United States Pharmacopoeia and the National Formulary; it has secured the adoption of these books as standards under the Federal Food, Drug, and Cosmetic Act, thereby retaining the making of standards for drugs and medicines in the hands of those best prepared to discharge this important duty; it has promoted pharmaceutical research and the discovery of new drugs and medicines.

The headquarters of the A. Ph. A., The American Institute of Pharmacy, is a beautiful, white marble structure located opposite the Lincoln Memorial in Washington. This building houses a historical museum, a reference library, and a chemical laboratory devoted to drug standardization and research.

Dr. A. G. DuMez, Dean of the School of Pharmacy, University of Maryland, is president; Mr. Charles H. Evans, Warrenton, Ga., president-elect; and Dr. E. F. Kelly, Washington, secretary. Mr. L. C. Bird, Richmond, is chairman of the local planning committee.

Medical College of Virginia News.

The annual Stuart McGuire Lectures and the spring postgraduate clinics were well attended. About one hundred ex-internes attended the reunion of the association of the hospital division during the lecture series.

Dr. Lewis E. Jarrett, director of the hospital division, has been made a member of the Board of Trustees of the Virginia Hospital Association.

Dr. H. L. Osterud, professor of anatomy, attended a board meeting of the American Association of University Professors in Chicago.

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Dr. Frank L. Apperly, professor of pathology, attended the meeting of the American Association of Pathologists and Bacteriologists at Pittsburgh, giving a paper on the effect of the sun rays on the incidence of cancer. Dr. Paul Kimmelstiel and Dr. George Z. Williams, associate professors of pathology, also attended the meeting.

Anonymous grants of $20,000.00 and $10,000.00 have been received for special college purposes.

News from University of Virginia, Department of Medicine.

On March 18, Dr. Harrison F. Flippin addressed the University of Virginia Medical Society on the subject, The Use of Sulfathiazole in the Treatment of Pneumonia.

Dr. Eugene M. Landis spoke before the Clinical Society of the University Hospitals of Cleveland on March 20. His subject was Kidney Extracts and Hypertension.

On April 1, Drs. E. C. Drash and F. B. Stafford addressed the Lynchburg Academy of Medicine on Modern Surgical Treatment of Pulmonary Tuberculosis.

At the meeting of the University of Virginia Medical Society on April 1, Dr. Raymond S. Crispell, Professor of Neurology and Psychiatry at Duke University School of Medicine, discussed Neuropsychiatry in the Aged.

On April 4, Dr. E. W. Kirby participated in the Postgraduate Course in Medicine and Surgery for the Warwick County Medical Society conducted under the auspices of the Department of Clinical and Medical Education of the Medical Society of Virginia. His subject was Urological Problems in Children.

The twenty-fifth Postgraduate Clinic of the University of Virginia Medical School in connection with the University of Virginia Division of Extension was held on April 5 and 6 under the chairmanship of Dr. Staige D. Blackford. Sixty-three physicians registered for the two-day Clinic. On Friday Dr. George M. Lawson, Professor of Preventive Medicine and Bacteriology, spoke on the subject of Viruses; Dr. Edward Francis, Medical Director of the United States Public Health Service, spoke on Tularemia; and Dr. William McCully James, of the Herrick Clinic, Panama, Republic of Panama, spoke on Amebiasis. A special clinical demonstration of electroencephalography was given by Dr. David C. Wilson, Professor of Neurology and Psychiatry, and Dr. E. L. Corey, Assistant Professor of Physiology. On Friday evening Dr. James gave the James Carroll Flippin Memorial Lecture, speaking on Observations of Malaria. On Saturday Dr. Albert Victor Hardy, Assistant Professor of Epidemiology at Columbia University, spoke on Undulant Fever; Dr. J. Earle Moore, of Baltimore, spoke on Syphilis; and Dr. R. Eugene Dyer, Senior Surgeon of the United States Public Health Service, discussed The Rickettsial Diseases.

At the meeting of the University of Virginia Medical Society on April 15, Dr. Edward Roberts, of the Lederle Laboratories, showed motion picture films on Pneumonia.

Dr. Baldwin Lucke, Professor of Pathology at the University of Pennsylvania, gave the third Alpha Omega Alpha Lecture on April 12. He discussed Neoplasma in Cold-Blooded Animals; Their Significance in the Experimental Investigation of Cancer.

Dr. C. C. Speidel gave a motion picture demonstration on Some Activities of Various Kinds of Cells, at the meeting of the American Association of Anatomists in Louisville on March 21.

The Jefferson Medical College Alumni Association

Will hold its Reunion Banquet, Wednesday, June 12, at 7:00 p. m., during the convention of the American Medical Association in New York City. The banquet will be at the Murray Hill Hotel on Park Avenue at 40th Street, that city, and tickets will be $2.50 each. If possible, reservations should be made in advance through Dr. Thomas F. Duhigg, chairman of the Dinner Committee, care of the hotel. However, alumni who fail to make reservations in advance are urged to attend any way.

News Notes from Duke University,

On March 16, forty-three students in the first year class of the School of Nursing received their caps in an impressive ceremony in the Duke Hospital amphitheatre. The capping ceremony marks the completion of a student's probationary period and her acceptance as a full-fledged student nurse. Mr. F. Vernon

Altvater, Superintendent of the Hospital, addressed the students.

On March 30, Dr. Richard Kovacs, Clinical Professor and Director of Physical Therapy at the Polyclinic Medical School and Hospital, New York City, gave an illustrated lecture at Duke Hospital on "Electricity in Medicine—Historical and Practical Aspects".

Dr. D. Hunter Marrow

Announces that he has returned to his home at Boydton for the summer, after spending the winter months at Daytona Beach, Fla.

Dr. Willis Fiske Evans,

Class of '33, Medical College of Virginia, was one of two selected last month for a $4,000 fellowship for medical research, given by Mrs. Ruth E. Ledyard of New York City, in memory of her husband. The recipients were selected from a list of applicants from all parts of the United States and will carry on their research along specified lines.

Dr. J. E. K. Flannagan

Was recently appointed superintendent and medical director of the Municipal Tuberculosis Sanatorium at Roanoke and entered upon his duties there on March 20.

Married.

Dr. Hugh Henry Trout, Jr., and Miss Elizabeth Page Broun of Roanoke, April 6. Dr. Trout is at present on the house staff of Union Memorial Hospital, Baltimore.

Dr. Edward Marshall Sandidge of Pleasant View and Miss Nellie Penn McDaniel of Sandidges, April 3.

Dr. Lewis Alexander Vance, class of '35, University of Virginia, Department of Medicine, and Miss Jane Kelley of Brookline, Mass., April 20. Dr. Vance recently completed his residency at the Massachusetts General Hospital.

Dr. Louis Benjamin Sheppard and Miss Callie Helen Nolde, both of Richmond, April 25.

Dr. Ernest Lynwood Bagby, class of '38, Medical College of Virginia, and Miss Barbara Lucille Riddell, both of Richmond, April 27.

The American Association of Industrial Physicians and Surgeons

Will hold its 25th annual meeting, together with the 1st annual meeting of The American Industrial Hygiene Association, at Hotel Pennsylvania, New York City, June 4, 5, 6, and 7. This will be a four-day convention intensively devoted to the problems of industrial health in all of their various medical, technical, and hygienic phases, with particular stress on prevention and control of occupational hazards. Important programs have been prepared, and technical and scientific exhibits will be a feature of the convention. The dinner on Thursday evening, June 6, will be the occasion of the presentation of the Wm. S. Knudsen award for the year of 1939-40. The medical profession is not only invited, but urged to attend these gatherings as they will be of unusual interest and value to all practitioners interested in industrial injuries and illnesses.

Dr. Alex. F. Robertson, Jr.

Recently returned to his home in Staunton after a two weeks' course at Ann Arbor, Mich., following which he attended the convention of the American College of Physicians in Cleveland.

The National Gastroenterological Association

Has arranged an excellent program for its fifth annual meeting to be held in New York, June 4-6, under the presidency of Dr. Anthony Bassler of New York City. Headquarters will be at Hotel Roosevelt and members of the medical profession are invited. Programs or other information may be obtained from Dr. Henry Kendall, chairman of the Program Committee, 16 East 96th Street, New York City.

The American Medical Golfing Association.

Will hold its twenty-sixth annual tournament at Winged Foot Golf Club, Mamaroneck, New York, Monday, June 10, 1940. Winged Foot has two famous championship courses and a beautiful club-house. Some 250, out of the 1,360 Fellows of the A.M.G.A., are expected to take part at Winged Foot in the 36-hole competition, each contestant playing both courses. The hours for teeing off are from 7:00 A. M. to 2:00 P. M. The sixty prizes, in the nine Events, will be distributed after the banquet at the club-house at 7:00 P. M.

All members of the A.M.A. are eligible for Fellowship in the A.M.G.A. For registration application write the Secretary, Bill Burns, 2020 Olds Tower, Lansing, Michigan.

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The Greenbrier Interstate Medical and Surgical Society,

Composed of members of the Alleghany-Bath Medical Society of Virginia and the Greenbrier Valley Medical Society of West Virginia, held its second annual meeting at The Greenbrier, White Sulphur Springs, on April 6. Dr. Guy Hinsdale of White Sulphur Springs and Dr. R. P. Hawkins, Jr., of Clifton Forge presided. The program included papers by Dr. J. Edwin Wood of the University of Virginia, Dr. C. C. Coleman of the Medical College of Virginia, Dr. Richard Kovacs of New York Polyclinic Medical School, and Dr. B. S. Troedsson, director of Physical Therapy, Orange, N. J., Memorial Hospital.

Dr. J. D. Hagood

Of Clover is listed as a member of the governing board of Halifax County's proposed community forest.

Warning!

Virginia doctors should advise their laboratory technicians concerning information which appeared in the March, 1940 issue of the *American Journal of Clinical Pathology.*

Numerous complaints have reached the Registry of Medical Technologists regarding the activities of a certain person of Red Bank, New Jersey, who has launched an organization styled the "American Medical Technologists" which purports to issue certificates of qualification. It is soliciting membership especially among graduates of non-approved schools or those who are ineligible for examination by the standards of the Registry. The man in charge has never taken the Registry examination but assumes the designation of M. T. after his name in his drive for membership. He has also presumed to give approval to a number of commercial schools which are not approved by the Registry.

This enterprise is not sponsored by a scientific society but appears to be motivated by commercial assects, as a $5.00 registration fee is solicited from those desiring to join.

To obviate any confusion of this unauthorized movement with the legitimate work of the Registry of Medical Technologists of the American Society of Clinical Pathologists, this warning is issued to all interested in maintaining high standards to disseminate the true information to the unwary about the standing of the so-called "American Medical Technologists".

The American Society of Clinical Pathologists, assisted by the American Medical Association, has been active in standardizing training schools for medical technologists (laboratory technicians) and the American Society of Medical Technologists is the national organization which is interested in upholding these standards.

Symposium on Industrial Health.

In line with the increased interest in industrial health manifested by both the American Medical Association, the Medical Society of Virginia, and the National Association of Manufacturers, the Medical College of Virginia is putting on its first symposium on industrial health on September 12 and 13, 1940.

The program is practically made up and includes some of the outstanding authorities on industrial medicine in the country. The night meeting is to be semi-popular type to which the managers of industry will be especially invited. The principal speaker at this meeting will be Doctor Victor Heiser, author of "An American Doctor's Odyssey".

It is planned to publish the completed program in an early issue of the MONTHLY.

Dr. Alex. N. Chaffin,

Recently of Galax, announces that he is now at Wytheville.

Associated with Dr. C. A. Young.

Dr. Glenn L. Walker, who recently completed four years of postgraduate work at the University of Iowa, is now associated with Dr. C. A. Young of Roanoke in the practice of ophthalmology.

Dr. H. L. Segar

Of Warsaw has been re-elected one of the directors of the Northern Neck State Bank of that place.

Appreciation.

The Society's office was recently the recipient of two bound copies of Transactions—one for 1877 and one for 1900. The donor, Mr. William J. Wolly, representative in this section for Ciba Pharmaceutical Products, is much interested in old medical books and prints and found these recently at an auction sale.

Directors of Bank.

Dr. H. C. Rucker of Mattoax and Dr. J. L. Hamner of Mannboro were re-elected directors of the

Union Bank and Trust Company of Amelia for the year 1940.

The Virginia Society of Ophthalmology and Oto-Laryngology

Will hold its annual meeting at Hotel Chamberlain, Old Point Comfort, on Saturday, May 18, at 9:30 a. m. Programs have not yet been published but there will be two out-of-State guest speakers in addition to members on the program. Dr. Karl S. Blackwell of Richmond is president and Dr. Mortimer H. Williams of Roanoke is secretary.

Southern Society of Clinical Surgeons.

At the annual business meeting of this Society, held in Rochester, Minn., the latter part of March, the following officers were elected: President, Dr. J. S. Speed, Memphis, Tenn., vice-president, Dr. Charles Bruce Morton, University of Virginia, and secretary-treasurer, Dr. William Perrin Nicolson, Atlanta, Ga., (re-elected).

American Public Health Association.

The 69th annual meeting of this Association will be held in Detroit, Michigan, October 8-11. This is the largest and most important health convention held on this continent and will bring about 3,500 health officials together. The scientific meetings will cover all phases of health protection and promotion. A Health Exhibit will be held in connection with the meeting and an Institute on Health Education is scheduled prior to the official opening.

Dr. Reginald M. Atwater is Executive Secretary of the Association, with offices at 50 West 50th Street, New York City.

Educational Qualifications of Health Officers.

The American Public Health Association has recently adopted a Report on the Educational Qualifications of Health Officers. It is distributed free in the belief that it will serve a useful purpose in raising the educational standards of professional public health personnel. Copies may be secured from the American Public Health Association, 50 West 50th Street, New York, N. Y.

Dr. A. M. Owen,

For a number of years located at Long Island, announces that his address is now Gretna.

The American College of Chest Physicians

Has arranged an interesting program for its sixth annual meeting in New York City, June 8-10. Headquarters will be at Biltmore Hotel. One of the features of this session will be the "Information Please" luncheons to be held on the first and second days, with experts to sit at the head of the table and answer inquiries. Dr. Ralph C. Matson of Portland, Ore., is president, and Dr. Robert B. Homan, Jr., of El Paso, Texas, secretary.

American College of Physicians.

At the annual meeting of the College in Cleveland, early in April, under the presidency of Dr. O. H. Perry Pepper of Philadelphia, 258 new fellows and 143 associates were inducted into the College. Dr. James D. Bruce of Ann Arbor, Mich., assumed the presidency for 1940 and Dr. Roger I. Lee of Boston was named president-elect to take office in 1941.

Resident Physicians Wanted.

Opening for three mixed residencies, July 1. Excellent service. Good salary. Opportunity for one to be chief resident. Address: Superintendent, Roanoke Hospital, Roanoke, Va. (*Adv.*)

For Sale—

"Imperatori" Treatment and Diagnostic Unit, Ophthalmoscope (new), Fountain Cuspidor, Treatment Chair. Will sell cheap. Address Mrs. W. E. Fahrney, Admx., Broadway, Va. (*Adv.*)

For Sale—

A select and useful set of instruments, furnishings and fixtures, for a practicing physician doing a general and industrial practice. Also, a fresh stock of dispensing drugs. A good location in a desirable section of Virginia goes with the above merchandise. Address, Box 32, Goshen, Va. (*Adv.*)

Location in South Desired.

Southerner, Gentile, Harvard graduate, wishes to locate in South as assistant to a surgeon or in group practice. Has had five years' training in surgery and is at present first assistant to Professor of Surgery at an Eastern medical school. Also on surgical staff of Eastern medical school and hospital. Address "Surgeon", care this JOURNAL. (*Adv.*)

For Sale:

Complete office equipment and instruments. Practically new as used only a few weeks. Write No. 175, care of this JOURNAL. (*Adv.*)

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Obituary Record

Dr. George Adam Stover,

President of the Medical Society of Virginia in 1916-17, died at his home in South Boston, April 5, following an illness of a week. Dr. Stover was born in Augusta County on November 20, 1873, and graduated in medicine from the former University College of Medicine, Richmond, in 1900. A year later he located in South Boston, where he had since practiced and taken an active part in the civic as well as the professional life of that section. Prior to being made president of the Medical Society of Virginia, Dr. Stover had gained much prominence among doctors of the State as chairman of its Legislative Committee at the time of the repeal of the State license tax on doctors. He was an ex-president and for many years secretary of the South Piedmont Medical Society and active in other organizations. His wife and several children survive him.

Dr. Joseph Francis Geisinger,

Prominent Richmond physician, died April 15, after a short illness. He was born in 1883 and graduated from the former University College of Medicine, Richmond, in 1912. Before Dr. Geisinger began his study of medicine, he was associated with the staff of a local newspaper of which he was for a time city editor. After serving a year's internship, he became associated with the newly organized Stuart Circle Hospital, and, with the exception of an interval during the World War, he had continued his connection there, serving as head of the department of urology. Dr. Geisinger was also clinical professor of urology at the Medical College of Virginia. He served in France, during the World War, as a major in the Medical Corps and as adjutant of Base Hospital 45, or "The McGuire Unit".

Dr. Geisinger was active in civic and medical affairs. He had served as president of the Richmond Academy of Medicine and to him is given the credit for the organization of the Richmond Hospital Service Association. He was a member of several national medical associations and had been a member of the Medical Society of Virginia since 1914.

His wife, a son and one sister survive him.

Dr. David Lee Hirschler,

Who recently succeeded to the presidency of the Norfolk County Medical Society, died on March 22 of a heart attack, after an illness of a few days. He was a native of Norfolk and fifty-nine years of age. Dr. Hirschler graduated in medicine from the University of Virginia in 1901 and did graduate work in medical colleges in Germany. He was identified with several medical organizations and was always active in his local medical society. He is survived by his wife and a son.

Dr. Lewis Harvie Taylor,

Washington, D. C., died March 30 at his former home in Amelia County, Va. He was sixty-four years of age and a graduate of George Washington University, School of Medicine, in 1903. He served an internship and residency at Washington hospitals, later locating in that city where he had become one of its prominent surgeons. He joined the Medical Society of Virginia shortly after graduation and had kept this membership continuously. Besides, he was a member of numerous other medical organizations and a Mason. He was a past president of the American Therapeutic Society and, at the time of his death, was president of the Visiting Staff of Sibley Memorial Hospital, Washington. Dr. Taylor was unmarried.

Dr. John Lee Grant,

Former Fauquier County physician, who located in Frederick County upon retirement from practice some years ago, died March 21, following a stroke. He was seventy-seven years of age and received his medical education at the University of Virginia. He was for some time stationed in the Philippines and in China in the Federal service. His wife and a son survive him.

Dr. Henry Benjamin Treakle

Died at his home in Richmond on March 30. He was a native of Lancaster County and sixty-six years of age. After graduating from the Baltimore University School of Medicine in 1893, he located at White Stone where he practiced for some time before coming to Richmond in 1919. A daughter and several brothers survive him.

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